

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	5765	photo near6 voltage	US- PGPUB; USPAT
2	BRS	L2	2266	1 same (sensor or detector or monitor)	US- PGPUB; USPAT
3	BRS	L3	171	1 same (sensor or detector or monitor) same semiconductor	US- PGPUB; USPAT
4	BRS	L4	745	surface same photo near6 voltage	US- PGPUB; USPAT
5	BRS	L5	21	4 same (sensor or detector or monitor) same semiconductor	US- PGPUB; USPAT
6	BRS	L6	123	surface same photo near6 voltage same semiconduct\$6	US- PGPUB; USPAT
7	BRS	L8	1	surface same photo near6 voltage same semiconduct\$6 same (measur\$8 or sensor\$8 or detect\$8 or monitor\$8) same (chemical or molecule or analyte)	US- PGPUB; USPAT
8	BRS	L7	72	surface same photo near6 voltage same semiconduct\$6 same (measur\$8 or sensor\$8 or detect\$8 or monitor\$8)	US- PGPUB; USPAT

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8	BRS	L7	72	surface same photo near6 voltage same semiconduct\$6 same (measur\$8 or sensor\$8 or detect\$8 or monitor\$8)	US- PGPUB; USPAT

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=> s photo (8w) voltage

106852 PHOTO
1243 PHOTOS
108050 PHOTO
(PHOTO OR PHOTOS)
305721 VOLTAGE
30681 VOLTAGES

320318 VOLTAGE
(VOLTAGE OR VOLTAGES)

L5 393 PHOTO (8W) VOLTAGE

=> s semiconduct? (p) (sens? or detect? or monitor? or measur?)

564947 SEMICONDUCT?

2539 SEMICON

19 SEMICONDS

2552 SEMICON

(SEMICON OR SEMICONDS)

565633 SEMICONDUCT?

(SEMICONDUCT? OR SEMICON)

1303020 SENS?

1542828 DETECT?

371577 MONITOR?

2835108 MEASUR?

L6 85302 SEMICONDUCT? (P) (SENS? OR DETECT? OR MONITOR? OR MEASUR?)

=> s l5 and l6

L7 47 L5 AND L6

=> display l7 1-47 ibib abs

L7 ANSWER 1 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1150186 CAPLUS

TITLE: Voltage **detector**, electric power unit and
semiconductor device [Machine Translation].

INVENTOR(S): Hachiya, Yoshiaki

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2005300376	A2	20051027	JP 2004-117898	20040413
PRIORITY APPLN. INFO.:			JP 2004-117898	20040413

AB [Machine Translation of Descriptors]. Electric power low electric power consumption conversion and voltage detection precision improvement of the voltage detector in order to control in the voltage which desires the voltage of the terminal which is supplied, low ripple voltage, and number of articles decrease are actualized. The output signal of the error amplifier 5 which possesses with the detection terminal where the reference terminal and the terminal VO2 for voltage detection where the voltage which does not possess temperature characteristic fluctuation is impressed are connected is transmitted to the control terminal of switching device 6. Is outputted to detection signal output terminal PC voltage fluctuation of terminal VO2 for voltage detection minds error amplifier 5, fixed current source 4, by the V-I translate circuit which consists of the current mirror circuit which switching device 6, and switching device consists of 7 and switching device 8, as the electric current signal. This signal is transmitted to outside with **photo** coupler 14, **voltage** of output **voltage** terminal VOUT is controlled.

L7 ANSWER 2 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1110689 CAPLUS

DOCUMENT NUMBER: 143:470735

TITLE: Effect of the load resistance in the linearity and sensitivity of MIS position sensitive detectors

AUTHOR(S): Aguas, H.; Pereira, L.; Raniero, L.; Fortunato, E.;

Martins, R.
CORPORATE SOURCE: Departamento de Ciencia dos Materiais/CENIMAT,
Faculdade de Ciencias e Tecnologia, Universidade Nova
de Lisboa, Caparica, 2829-516, Port.
SOURCE: Materials Research Society Symposium Proceedings
(2005), 862(Amorphous and Nanocrystalline Silicon
Science and Technology--2005), 691-696
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The linearity and **sensitivity** of the position **sensitive**
detectors (PSD) are dependent on the resistance of the collecting
layer and of the load resistance, mainly if the **detection** is
based on the **measurement** of the **photo-lateral**
voltage. To determine the value of the load resistance to be used in
metal - insulator - **semiconductor** (MIS) PSDs structures that
lead to the maximum value of **sensitivity** and linearity, we propose
an elec. model through which it is able to simulate the proper
sensor response and how the load resistance influence the results
obtained. This model is valid for PSDs where the resistance of the
collecting resistive layer is quite low ($\leq 500 \Omega$), leading to
a low output impedance. The value of the load resistance should be of
about 1 k Ω to achieve a good compromise between the linearity and
the **sensitivity** of the PSD. This result is in agreement with
the set of expts. performed.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1109446 CAPLUS
DOCUMENT NUMBER: 144:159768
TITLE: Numerical simulation of GaAs MESFET photodetector for
OEIC receivers
AUTHOR(S): Muthusamy, Madheswaran; Kuppusamy, Kalaiarasi
CORPORATE SOURCE: Department of Electronics and Communication
Engineering, P.S.N.A. College of Engineering and
Technology, Dindigul, 62422, India
SOURCE: Proceedings of SPIE-The International Society for
Optical Engineering (2005), 5881(Infrared and
Photoelectronic Imagers and Detector Devices),
588104/1-588104/8
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A two-dimensional numerical model of GaAs MESFET with non uniform doping
is developed and various characteristics are estimated under different
illumination conditions. The Poisson's equations in the gate depletion
region and the space charge region of the channel substrate junctions are
solved numerically under dark and illumination condition. The
photo induced voltages at the schottky contact (Vop) as
well as at the junction between channel and substrate (Vops) are calculated
for estimating the channel voltage profile and the drain current
characteristics. It has been seen that the depletion widths are strongly
influenced by illumination and hence the characteristics. The model
developed here can be used to obtain the drain and the transfer
characteristics under dark and illuminated conditions. The device
parameters such as transconductance and gate to source capacitance are
numerically estimated to examine the switching characteristics of the device.
The photo current has also been estimated and the responsivity of the device
has been calculated. The responsivity is found to be very high. The switching
speed has also increased under illumination because of the decrease in the
RC time constant. It has been concluded that the two dimensional modeling

provides better accurate solution and closely fit with the exptl. results.
The model can be used as basic tool for accurate simulation of MESFET
photodetector for OEIC applications.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1096618 CAPLUS
TITLE: LED type signal light vessel [Machine Translation].
INVENTOR(S): Ikeda, Kenji; Nakayasu, Kazuyuki
PATENT ASSIGNEE(S): Koito Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 2005285527	A2	20051013	JP 2004-97337	20040330
PRIORITY APPLN. INFO.:			JP 2004-97337	20040330

AB [Machine Translation of Descriptors]. You can do modulated light
appropriately according to plain air, it is natural and the LED type
signal light vessel which can do the modulated light which does not have
strange feeling is offered. Rectifying commercial business power source
P, the LED type signal light vessel 10 which it tries to supply electric
power to LED which gives out the light light for the signal, the full-wave
rectification section 30 which rectifies commercial business power source
P and fixed electric current section it has 40 and modulated light control
section 50, it is something which electric power offering/accompanying is
provided to LED by the fact that fixed electric current section 40
receives the output of full-wave rectification section, 30 impresses the
reference voltage by fixed voltage element 41 in output
semiconductor 45, as for modulated light control section 50, in
fixed electric current section 40 reference voltage of the fixed voltage
element 41 In order to lie between with the edge A and output
semiconductor 45, when distribution facilities it is done, the
photo **sensor** it has with 55 which **detects** plain air
and amplifier 51, it expands the output of **photo sensor**
55 with amplifier 51, daytime the **voltage** which is equal to
reference voltage impresses in output **semiconductor**, 45 becomes
dark changing the output of fixed electric current section 40 due to the
fact that the voltage which is lower than reference voltage impresses in
output **semiconductor** 45, modulated light it does LED.

L7 ANSWER 5 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:779842 CAPLUS
DOCUMENT NUMBER: 144:161091
TITLE: Study of ultrafast process in semiconductor
AUTHOR(S): Huang, Shi-Hua; Li, Xi; Lin, Yan; Lu, Fang
CORPORATE SOURCE: Surface Physics Laboratory, Fudan University,
Shanghai, 200433, Peop. Rep. China
SOURCE: Hongwai Yu Haomibo Xuebao (2005), 24(3), 179-181
CODEN: HHXUEZ; ISSN: 1001-9014
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The ultrafast process in **semiconductor** was studied by using
femtosecond pulse laser. The momentum relaxation of carriers excited by
laser was **detected** by using ultrafast **photo-**
voltage spectra. The time of momentum relaxation of carriers in
semiconductor Si is about 70 fs, which is related to the
probability of carrier-carrier scattering. In SiGe quantum dot, it is

about 130 fs due to the decrease of carrier-carrier scattering. The energy relaxation and diffusion processes can be **measured** by ultrafast reflection spectra. The time of energy relaxation of carriers excited by high energy laser is about several picoseconds, which is related to the probability of carrier-phonon scattering, and the diffusion time of carriers excited by low energy laser is about several hundreds picoseconds.

L7 ANSWER 6 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:651855 CAPLUS

DOCUMENT NUMBER: 143:142541

TITLE: Method for semiconductor material specific property characterization and its system

INVENTOR(S): Zhang, Yonggang; Li, Aizhen; Qi, Ming

PATENT ASSIGNEE(S): Shanghai Inst. of Microsystem and Information Technology, CAS, Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
CN 1556390	A	20041222	CN 2003-10122883	20031230
PRIORITY APPLN. INFO.:			CN 2003-10122883	20031230

AB In the invention, two or more dim light monochromators are used, and photoconduction, **photo-voltage** or photo capacitance of material are as response signal. Relation between modulation frequency of light source and amplitude of response signal is **measured** under frequency-changing modulation is carried out for **measuring** light source by using phase locking amplification technique. **Measured** data are fitted so as to obtain data about materials characteristics. Disclosed system is composed of two or more dim light monochromators and optical path of reflector for switching wavelength; optical modulator, bias power supply, bias network and sample holder; lock-in-amplifier for **detecting** weak signal and record of collected data controlled by computer. The invention is suitable to **measurement** and characterization of **semiconductor** characteristic such as each film, epitaxy microstructure and dimensional material.

L7 ANSWER 7 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:439000 CAPLUS

TITLE: A new well capacity adjusting scheme for high sensitivity, extended dynamic range CMOS imaging pixel sensors

AUTHOR(S): Lai, Cheng-Hsiao; Yu, Yueh-Ping; King, Ya-Chin

CORPORATE SOURCE: Microelectronics Laboratory, Semiconductor Technology Application Research (STAR) Group, Department of Electrical Engineering, National Tsing-Hua University, Hsin-Chu, 300, Taiwan

SOURCE: Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief Communications & Review Papers (2005), 44(4B), 2214-2216

CODEN: JAPNDE

PUBLISHER: Japan Society of Applied Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An embedded 3T active-pixel complementary metal oxide **semiconductor** (CMOS) image **sensor**, fabricated with a standard 0.25- μ m CMOS logic process with new well capacity adjusting scheme is proposed to extend dynamic range. The photo-**sensing** device

consists of a photo-gate area and a photo-diode, and the well capacity is adjusted by controlling the pulse voltage on the photo-gate. Besides, the imaging **sensitivity** can be improved through optimizing the photo-gate to photo-diode area ratio and the pulse high level of **photo-gate voltage**. The exptl. results demonstrate that the pixel can achieve both high **sensitivity** at low illumination and extended dynamic range of 25 dB under high illumination.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:377203 CAPLUS

DOCUMENT NUMBER: 143:29340

TITLE: An equivalent circuit approach to the modelling of the dynamics of dye sensitized solar cells

AUTHOR(S): Bay, L.; West, K.

CORPORATE SOURCE: The Danish Polymer Centre, Riso National Laboratory, Roskilde, DK-4000, Den.

SOURCE: Solar Energy Materials & Solar Cells (2005), 87(1-4), 613-628

CODEN: SEMCEQ; ISSN: 0927-0248

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A model that can be used to interpret the response of a dye-**sensitized photo** electrode to intensity-modulated light (intensity modulated **voltage** spectroscopy, IMVS and intensity modulated photo-current spectroscopy, IMPS) is presented. The model is based on an equivalent circuit approach involving a transmission line with both an elec. and an ionic branch. An anal. expression including a term from the passive electrochem. impedance of the network, and a term accounting for the photo generation in the electrode is found. From this model IMVS and IMPS responses as well as IV curves can be calculated and used to optimize the photo electrode with respect to thickness and d. The result is math. equivalent to the usual approach for IMVS and IMPS modeling based on diffusion equations describing the transport of electrons in the **semiconductor** and on charge accumulation in traps, although these assumptions are not included in the transmission line model. The diffusion-like behavior shows up as a consequence of the topol. of the coupling between transport processes rather than as an inherent property of the electron transport itself. In this model electron trapping occurs because of electrostatic interactions between electrons in the **semiconductor** and ions in the electrolyte.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:762473 CAPLUS

DOCUMENT NUMBER: 142:357849

TITLE: Photo-thermovoltaic effect induced by CO2 laser illumination of PbTe crystals

AUTHOR(S): Dashevsky, Z.; Asmontas, S.; Gradauskas, J.; Kasiyan, V.

CORPORATE SOURCE: Department of Materials Engineering, Ben-Gurion University, Beer Sheva, 84105, Israel

SOURCE: International Conference on Thermoelectrics (2003), 22nd, 456-459

CODEN: ICTNBZ; ISSN: 1094-2734

PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The study of the thermovoltaic effect in the presence of a high temperature gradient within structures with a potential barrier (in particular, a p-n junction) is of special interest. The photo-thermovoltaic effect (PTVE)

is caused by the generation of electron-hole pairs due to the local temperature increase and the carrier separation at a potential barrier. In contrast to the photovoltaic effect in which the nonequil. electron-hole pairs move towards the junction, a temperature gradient causes a flux of charge carriers from the hot towards the cold region. Usually the direction of the temperature gradient is the same both in the p- and the n-region. The thermovoltage at the barrier (junction) is, thus, the difference between the two components, $V_B = V_{Bp} - V_{Bn}$, where V_{Bp} and V_{Bn} are the contributions of the p- and n-regions, resp. However, in the case of an asym. p-n junction, a metal-**semiconductor** Schottky barrier, or a heterojunction, the contribution of these components can be different. The barrier Seebeck coeffs., $S_{Bp} = V_{Bp}/\Delta T_{Bp}$ and $S_{Bn} = V_{Bn}/\Delta T_{Bn}$ - with ΔT_{Bp} and ΔT_{Bn} the near-barrier temperature difference in the p-type and n-type regions, resp. - are proportional to E_g/qT (E_g is the energy gap of **semiconductor** material, q is the electronic charge). The present study of the PTVE over a wide temperature range (80-300 °K) in PbTe was undertaken with the purpose of checking the validity of the above considerations, namely: (i) the near surface local heating due to the absorption of the far IR laser pulses by the free electrons; (ii) the low thermal conductivity of PbTe crystals. For **measurements** of the PTVE was used a laser pulse produced by a CO2 laser source (laser power .apprx. 1.26 kW) with pulse duration of 200 ns which was directed normal to the external surface in the vicinity of the metallic contact. The diameter of illuminated area (area over which the laser pulse intensity is >50% of its peak value) was .apprx.0.4 mm. The PTVE **measurements** were carried out in an optical cryostat over the 80-300 °K temperature range. The thermovoltaic effect in p-type PbTe with a Ni-**semiconductor** Schottky-barrier is by a factor of 30 at least higher than in homogeneous (ohmic contact) PbTe.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:712612 CAPLUS

DOCUMENT NUMBER: 141:342481

TITLE: A high sensitivity nitric dioxide sensor based on MCM-41 incorporation of tin

AUTHOR(S): Yuliarto, Brian; Zhou, HaoShen; Honma, Itaru; Katsumura, Yosuke

CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba-shi, Ibaraki, 305-8568, Japan

SOURCE: Chemical Sensors (2004), 20(Suppl. B), 608-609

CODEN: KAGSEU

PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A self-ordered and structure controlled mesoporous MCM-41 incorporation of tin film was 1st prepared by a mol. surfactant template method using spin coating. Surface **photo voltage** (SPV) NO2 gas **sensor** was then fabricated by the self-ordered tin-modified MCM-41 film based on a metal-insulator-**semiconductor** (MIS) structure. The high **sensitivity** of the mesoporous MCM-41 incorporation of tin was obtained at the NO2 gas concns. ≥ 350 ppb at room temperature The **sensor's** responsiveness was also studied.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 11 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:629778 CAPLUS

DOCUMENT NUMBER: 141:318688

TITLE: Experimental and Theoretical NOx Physisorption Analyses of Mesoporous Film (SBA-15 and SBA-16) Constructed Surface **Photo Voltage**

(SPV) Sensor

AUTHOR(S): Yamada, Takeo; Zhou, HaoShen; Uchida, Hidekazu; Honma, Itaru; Katsube, Teruaki

CORPORATE SOURCE: Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, 305-8568, Japan

SOURCE: Journal of Physical Chemistry B (2004), 108(35), 13341-13346

CODEN: JPCBFK; ISSN: 1520-6106

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Mesoporous silica films with hexagonal (SBA-15) and cubic (SBA-16) mesostructures have been successfully employed to fabricate surface **photo voltage (SPV) sensors** for NO2 gas. These SPV **sensors** exhibited better **sensitivity** (S) in 50 ppm NO2 gas than in 100 ppm NO gas. SPVs with SBA-16 film showed better **sensitivity** in 1 ppm NO2 gas than in 1 ppm NO gas. These phenomena can be explained by the phys. adsorption of the target gas into the mesoporous layer, which is regarded as the insulator layer in metal-insulator-**semiconductor** (MIS) devices.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 12 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:338357 CAPLUS

DOCUMENT NUMBER: 141:229448

TITLE: Effect of metal transition addition on mesoporous MCM-41 SPV NO2 gas sensor

AUTHOR(S): Yuliarto, Brian; Zhou, Hao-Shen; Honma, Itaru; Katsumura, Yosuke

CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba-shi, Ibaraki, 305-8568, Japan

SOURCE: Chemical Sensors (2003), 19(Suppl. B), 193-195

CODEN: KAGSEU

PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Some transition metals (tin, vanadium, and tungsten) were introduced into the mesoporous silica films by sol-gel spin-coating using direct synthesis method. The film structure was characterized by x-ray Ray Diffraction (XRD), N2 isotherm, and Transmission Electron Microscope (TEM) analyses. The resulting films were then prepared as surface **photo voltage (SPV) sensor** devices, which is based on metal-insulator-**semiconductor** structure. The effect of transition metals incorporated on the mesoporous layer structure was studied and related to the NO2 gas **sensing** properties.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 13 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:964157 CAPLUS

DOCUMENT NUMBER: 140:312774

TITLE: UV **detector** based on pn-heterojunction diode composed of transparent oxide **semiconductors**, p-NiO/n-ZnO

AUTHOR(S): Ohta, Hiromichi; Kamiya, Masao; Kamiya, Toshio; Hirano, Masahiro; Hosono, Hideo

CORPORATE SOURCE: ERATO, Hosono Transparent ElectroActive Materials Project, JST, Takatsu, Kawasaki, 213-0012, Japan

SOURCE: Thin Solid Films (2003), 445(2), 317-321

CODEN: THSFAP; ISSN: 0040-6090

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A transparent UV-detector was fabricated using a high-quality pn-heterojunction diode composed of transparent oxide semiconductors, p-type NiO and n-type ZnO, and its UV-response was measured at room temperature. Transparent tri-layered oxide films of ZnO/NiO/ITO were heteroepitaxially grown on an YSZ (1 1 1) substrate by a pulsed-laser-deposition combined with a solid-phase-epitaxy technique and they were processed to fabricate a p-NiO/n-ZnO diode. The diodes exhibited a clear rectifying I-V characteristic with an ideality factor of .apprx.2 and a forward threshold voltage of .apprx.1 V. Although the photo-responsivity was fairly weak at the zero bias voltage, it was enhanced up to .apprx.0.3 A W⁻¹ by applying a reverse bias of -6 V under an irradiation of 360-nm light, which is comparable to that of com. devices.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 14 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:649863 CAPLUS

DOCUMENT NUMBER: 140:21016

TITLE: Design and optimization of InGaAs/InP photodetector for coordinate sensitive detection systems

AUTHOR(S): Purica, M.; Budianu, E.; Grozescu, I.; Rusu, E.; Slobodchikov, S. V.

CORPORATE SOURCE: National Institute for Research and Development of Microtechnologies, Bucharest, Rom.

SOURCE: EDMO 2001, International Symposium on Electron Devices for Microwave and Optoelectronic Applications, 9th, Vienna, Austria, Nov. 15-16, 2001 (2001), 113-118. Institute of Electrical and Electronics Engineers: New York, N. Y.

CODEN: 69EIY3; ISBN: 0-7803-7049-X

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The quadrant p-i-n photodiode and the position sensing detector based on the longitudinal photoeffect are the most suitable photodetectors structure for coordinate sensitive detection systems. The optimization of a quadrant p-i-n photodiode structure on InGaAs/InP heterostructures, suited for IR laser telemetry and optical centering applications, taking into account the influence of material characteristics and structure parameters on the photoresponse is presented. The dependence of the longitudinal photo-voltage in In_{0.53}Ga_{0.47}As p-n junction on the coordinate x of the light spot and temperature was studied. A linear dependence $V_{phl} = f(x)$ was observed and the V_{phl} temperature dependence in the 100-300 K range is determined by carrier mobility change. The quadrant p-i-n photodetectors shows the wide spectral characteristics (0.9-1.7) μm with a responsivity of each element of 0.62 A/W and the p-n junction structure presents the slope of the inversion characteristics for the longitudinal photoelec. effect of (0.8-1.0)103 V/W $\cdot\text{mm}$.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:615823 CAPLUS

DOCUMENT NUMBER: 139:316085

TITLE: A possibility of block-copolymer templated mesoporous silica films applied to surface photo-voltage (SPV) type NO_x gas sensor

AUTHOR(S): Yamada, T.; Zhou, H. S.; Uchida, H.; Tomita, M.; Ueno, Y.; Katsube, T.; Honma, I.

CORPORATE SOURCE: Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba,

Ibaraki, 305-8568, Japan
SOURCE: Studies in Surface Science and Catalysis (2003),
146(Nanotechnology in Mesoporous Materials),
783-786
CODEN: SSCTDM; ISSN: 0167-2991
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A self-ordered hexagonal and cubic-like mesoporous silica film was
successfully fabricated from a Metal-Insulator-Semiconductor
device applied to a Nitrogen oxides (NOx) gas sensor based on
the surface **photo voltage** system. These self-ordered
mesoporous silica films are synthesized by using a nonionic triblock
copolymer surfactant as a template in spin coating. The **sensing**
characteristics as a NOx gas sensor are dependent on both
mesostructures and exposure gases.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 16 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:363612 CAPLUS
DOCUMENT NUMBER: 139:29814
TITLE: Surface photovoltage of modified mesoporous silica
film for NO2 gas sensor
AUTHOR(S): Yuliarto, O. Brian; Asai, Keisuke; Yamada, Takeo;
Zhou, Hao-Shen; Honma, Itaru
CORPORATE SOURCE: Department of Quantum Engineering and Systems Science,
Graduate School of Engineering, The University of
Tokyo, Tokyo, 113-8656, Japan
SOURCE: Chemical Sensors (2002), 18(Suppl. B), 142-144
CODEN: KAGSEU
PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Modified mesoporous silica film was prepared by direct synthesis method
using sol-gel and spin coating. The surface **photo**
voltage (SPV) technique was then applied for the tin-modified
silica mesoporous film for NO2 gas sensor. The sensor consists of Au/
modified mesoporous silica/ Si3N4/ SiO2/ Si/ Al. Clear response was
obtained at the NO2 gas concentration ≥ 1 ppm at room temperature The changes
in
the average value and phase of the a.c. photocurrent, and the responsibility
were observed after exposure of NO2 gas to the film sample. Compared with
those of the pure silica mesoporous film, modified mesoporous silica film
showed enhanced sensitivity for NO2 gas sensor.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:288363 CAPLUS
DOCUMENT NUMBER: 139:187822
TITLE: Study of 980 nm GaAs based pumping lasers by
photo-voltage spectroscopy
AUTHOR(S): Udhayasankar, M.; Dellagiovanna, M.; Morasca, S.;
Stella, A.
CORPORATE SOURCE: European Schools of Advanced Studies, Pavia, I-27100,
Italy
SOURCE: Physica E: Low-Dimensional Systems & Nanostructures
(Amsterdam, Netherlands) (2003), 17(1-4), 597-599
CODEN: PELNFM; ISSN: 1386-9477
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Application of **photo-voltage** spectroscopy (PVS)

technique in the study of **semiconductor** superlattices (SLs) and quantum well (QW) structures is presented. Room temperature (RT) PVS spectra in

the vicinity of the active layers of the structures display several interesting features that originate from carrier quantum confinement. A sharp exciton absorption peak was obtained at RT. The other features namely, splitting between the heavy and light holes, other high quantum confinement levels also were observed. The PVS **measurements** were compared with that of photoluminescence (PL) **measurements**. The QW wavelengths by PVS **measurements** were always higher than that of PL **measurements** and it is due to quantum confined Stark effect (QCSE).

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 18 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:569782 CAPLUS

DOCUMENT NUMBER: 137:271289

TITLE: NO and NO₂ gas sensors based on surface photovoltage system fabricated by self-ordered mesoporous silicate film

AUTHOR(S): Zhou, Hao-Shen; Yamada, Takeo; Asai, Keisuke; Honma, Itaru; Uchida, Hidekazu; Katsube, Teruaki

CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, 305-8568, Japan

SOURCE: Studies in Surface Science and Catalysis (2002), 141(Nanoporous Materials III), 623-630
CODEN: SSCTDM; ISSN: 0167-2991

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The 1st NO and NO₂ gas **sensors** based on surface **photo-voltage** (SPV) **semiconductor** device system are fabricated by the metal/ SiO₂ (self-ordered hexagonal mesoporous) -/Si₃N₄/SiO₂/Si structure. Size controlled silicate hexagonal mesoporous film is successfully synthesized by spin coating on a Si₃N₄/SiO₂/Si silicon wafer using poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (Pluronic P123 =EO₂₀PO₇₀EO₂₀) triblock copolymers as a template. The characteristics of mesoporous film are studied in XRD, TEM. The **sensing** properties of the self-ordered hexagonal mesoporous SPV system were studied by exposing to the NO or NO₂ gas and air repeatedly. The changes of the average value and phase of the a.c. photocurrent (I_{ph}) were observed between the NO or NO₂ gas and air. The response of the alternatively photocurrent is resulted from the phys. adsorption and chemical interaction between **detected** NO or NO₂ gas and the self-ordered hexagonal mesoporous film.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 19 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:482822 CAPLUS

DOCUMENT NUMBER: 137:40960

TITLE: Chemical image sensor

INVENTOR(S): Ito, Yoshitaka

PATENT ASSIGNEE(S): Shindengen Electric Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002181774	A2	20020626	JP 2000-376340	20001211
PRIORITY APPLN. INFO.:			JP 2000-376340	20001211

AB The title device is a light addressable potentiometric **sensor** uses **semiconductor** surface **photo voltage** technique. The 2 dimensional image of chemical species is obtained by radiating the **semiconductor** substrate plate with an a.c. light beam of coaxial shaped which can be shifted at any position along the diameter direction of the coaxial circle. The device is characterized by having high speed signal processing, miniaturized size, and low cost.

L7 ANSWER 20 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2002:349250 CAPLUS
 DOCUMENT NUMBER: 136:363005
 TITLE: Chemical imaging sensor
 INVENTOR(S): Ito, Yoshitaka
 PATENT ASSIGNEE(S): Shindengen Electric Mfg. Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002131276	A2	20020509	JP 2000-328707	20001027
PRIORITY APPLN. INFO.:			JP 2000-328707	20001027

AB The title **sensor** is prepared by laminating a **semiconductor** layer and an insulation layer on a transparent substrate of sapphire or quartz. A reference electrode and a counter electrode are formed on the same surface of the **sensing** unit with an insulation film in between. The photo address elec. potential responding **sensor** is based on the **measurement** of surface **photo** elec. **voltage** generated from the **semiconductor** layer due to the formation of electron pos. hole pair in the **semiconductor** layer while the transparent substrate is intermittently irradiated by a light source from its backside.

L7 ANSWER 21 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2002:287329 CAPLUS
 DOCUMENT NUMBER: 137:186507
 TITLE: The application of block copolymer templated mesoporous silicate film for SPV gas sensor
 AUTHOR(S): Yamada, T.; Zhou, H. S.; Uchida, H.; Zhang, W.; Tomita, M.; Ueno, Y.; Ichino, T.; Honma, I.; Asai, K.; Katsube, T.
 CORPORATE SOURCE: National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, 305-8568, Japan
 SOURCE: Chemical Sensors (2001), 17(Suppl. B), 300-302
 CODEN: KAGSEU
 PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Surface **photo voltage** (SPV) **semiconductor** characterization technique has a great possibility to gas **sensor** application. The mesoporous materials also have a possibility to improve the gas adsorption property of SPV device due to its high surface area and pore channel alignment structure (mesostructure) property. We are succeeded in assembling mesoporous silicate film into SPV device, estimating the NO gas **sensing** property of them and finding the **sensing** property strongly depend on mesostructure.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 22 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:819838 CAPLUS

DOCUMENT NUMBER: 136:89643

TITLE: Ordered mesoporous silicate materials from a template of triblock copolymer (II): synthesis of film and application for gas sensor

AUTHOR(S): Zhou, Hao-Shen; Yamada, Takeo; Asai, Keisuke; Honma, Itaru; Uchida, H.; Katsube, T.

CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, 305-8568, Japan

SOURCE: Key Engineering Materials (2002), 206-213(Pt. 3, Euro Ceramics VII), 1985-1988

CODEN: KEMAEY; ISSN: 1013-9826

PUBLISHER: Trans Tech Publications Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Size controlled silicate mesoporous film was successfully synthesized using poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (EO1POMeOn) triblock copolymers as a template. The mesostructure and d spacing of the mesoporous film can be controlled by the synthesis conditions. The hexagonal mesoporous film can be obtained using Pluronic P123 (EO20PO70EO20) triblock copolymer as a template. The characteristics of mesoporous films were investigated in XRD. A surface **photo voltage** (SPV) system has been applied to the Metal-SiO₂ mesoporous-Si device structure (MIS) to investigate the characteristics as a NO gas sensor.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 23 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:787983 CAPLUS

DOCUMENT NUMBER: 136:62253

TITLE: Thin films of EuO-CeO₂ semiconductor system

AUTHOR(S): Scurtul, K. D.; Shmyryeva, A. N.; Semikina, T. V.

CORPORATE SOURCE: Faculty of Electronic, Microelectronics Dept., National Technical University of Ukraine "KPI", Kiev, 252056, Ukraine

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2001), 4415(Optical Organic and Inorganic Materials), 121-125

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This work represents the results of synthesis and research of the thin film properties based on the EuO-CeO₂ system, which alters its properties in dependence on percent concentration of one of components.

Double-composition

EuO-CeO₂ oxide films with a EuO content of 30-40 weight% demonstrate extreme properties: the minimal dark conductivity is 10⁻¹⁰ Ω⁻¹m⁻¹, a maximal **photo-sensitivity**, and the nonlinearity of current-**voltage** characteristics is 1.48; a minimal temperature resistance coefficient is 10⁻³ 1/degree. In particular, the rare-earth **semiconductor** photocond. kinetics is connected with decreasing of photocond. relaxation time at illumination intensity gain. At an illumination intensity of I equal to 10⁵-10⁶ W/cm², the photocond. relaxation time has been found to be 10⁻¹⁰ s.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 24 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:787885 CAPLUS

DOCUMENT NUMBER: 136:105059
 TITLE: Photovoltaic response of Tolypothrix tenuis cells and their fragments in photoelectrochemical cell
 AUTHOR(S): Wrobel, Danuta; Hanyz, Izabela; Lukasiewicz, Jędrzej
 CORPORATE SOURCE: Division of Molecular Physics, Institute of Physics, Poznan University of Technology, Poznan, 60-965, Pol.
 SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2001), 4413(Epilayers and Heterostructures in Optoelectronics and Semiconductor Technology), 345-351
 CODEN: PSISDG; ISSN: 0277-786X
 PUBLISHER: SPIE-The International Society for Optical Engineering
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB We have studied spectral properties and photo potential/photo current generation in cyanobacterium Tolypothrix tenuis cells and their fragments in native and DCMU-treated samples. DCMU is known as an inhibitor of charge carrier process which is able to block the electron flow in photo synthetic apparatus. Since there is a competition among radiative, non-radiative and charge separation processes which lead to deactivation of excited states of mols. following spectroscopic methods have been used in the experiment: absorption, **photo** acoustics and **photo voltage** action spectrum (dependence of **photo voltage** on the excitation wavelength). Spectroscopic investigation was accompanied by photoelec. **measurements** for which specially photo- electrochem. cell constructed of **semiconducting** and gold electrodes with Tolypothrix tenuis suspended in polyvinyl alc. - water solution (15%volume/volume) and immersed between them was used. Kinetics of photo current have been examined in time of seconds. Thermal deactivation process in DCMU-free and DCMU- treated cyanobacterium is discussed and participation of various biliproteins and Chl α -complexes in light energy conversion is indicated. It has been shown the influence of DCMU treatment on the photo signal generation in Tolypothrix tenuis cyanobacterium. Tolypothrix tenuis can be used in a system for light energy conversion into elec. energy.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 25 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:496629 CAPLUS
 TITLE: Active pixel sensor with high fill factor blooming protection
 INVENTOR(S): Guidash, Robert M.
 PATENT ASSIGNEE(S): Eastman Kodak Company, USA
 SOURCE: U.S., 12 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6259124	B1	20010710	US 1998-130665	19980807
PRIORITY APPLN. INFO.:			US 1998-130665	19980807

AB A **semiconductor** based image **sensor** having a plurality of pixels formed on a surface of the image **sensor**, such that each of the pixels has a photodetector configured to collect majority carriers created from incident light; a region within each of the photodetectors that is narrowed, the narrowed region of the photodetector being electrically coupled to a drain for the majority carriers; a reset means; a transistor for converting **photo**-charge to **voltage** or current. The narrowed region provides a path for excess photoelectrons in the photodetector to the drain. The narrow

regions path to the drain, in the preferred embodiment, is that of the drain used for the adjacent transistor.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 26 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:864549 CAPLUS
TITLE: Semiconductor image pickup component. [Machine Translation].
INVENTOR(S): Arima, Hiroshi; Ui, Hirotaka
PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000340779	A2	20001208	JP 1999-153673	19990601
JP 3514663	B2	20040331		

PRIORITY APPLN. INFO.: JP 1999-153673 19990601

AB [Machine Translation of Descriptors]. In the **semiconductor** image pickup component, like the retina of the organism wide light absorbent **sensitivity** range high contrast inspection function is actualized with simple circuit constitution. The **semiconductor** image pickup component has plural pixel circuits, each pixel circuit two photo **detector** P D1, has with P D2 and resistant Ri, photo **detector** P D1 and photo **detector** P D2 through resistant Ri, is connected in series. Each pixel circuit is connected through resistant Rn, in the connected node 1 of photo **detector** P D1 and resistant Ri the pixel circuit which adjoins. Is removed **photo detector** PD after **voltage** change of connected node 2 of 2 and resistant Ri is expanded, as the output signal.

L7 ANSWER 27 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:154254 CAPLUS
TITLE: Surface potential mapping: comparison of the vibrating capacitor and the SPV method
AUTHOR(S): Mizsei, Janos
CORPORATE SOURCE: Department of Electron Devices, Technical University of Budapest, Budapest, H-1521, Hung.
SOURCE: Solid-State Electronics (2000), 44(3), 509-513
CODEN: SSELAS; ISSN: 0038-1101
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Surface potential maps are very important for characterization of insulator covered and bare **semiconductor** surfaces. Contactless methods use capacitive coupling. Vibration (vibrating capacitor) and light (SPV, surface **photo voltage** method) are used for the surface excitation. Both methods give information about the surface potential, and are **sensitive** to the surface charge, too. This article discusses the differences and similarities between the methods, concerning theory, application and evaluation of the results. Several surface potential maps are presented and evaluated too.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 28 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:808780 CAPLUS
TITLE: Storage pixel sensor and pixel sensor array with signal compression

INVENTOR(S): Merrill, Richard B.; Lyon, Richard F.
PATENT ASSIGNEE(S): Foveon, Inc., USA
SOURCE: PCT Int. Appl.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9966560	A1	19991223	WO 1999-US13165	19990610
W: KR				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6512544	B1	20030128	US 1998-98688	19980617
PRIORITY APPLN. INFO.:			US 1998-98688	A 19980617

AB A storage pixel **sensor** disposed on a **semiconductor** substrate comprises a photosensor. At least one nonlinear capacitive element is coupled to the photosensor. At least one nonlinear capacitive element is arranged to have a compressive photocharge-to-voltage gain function. An amplifier has an input coupled to the nonlinear capacitor and an output. Other, non-capacitive elements may be employed to produce a compressive **photo-charge-to-voltage** gain having at least one breakpoint.

L7 ANSWER 29 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:219563 CAPLUS
DOCUMENT NUMBER: 128:315203
TITLE: Solid-state image pickup device
INVENTOR(S): Harada, Koichi
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10093064	A2	19980410	JP 1996-243367	19960913
JP 3584629	B2	20041104		
PRIORITY APPLN. INFO.:			JP 1996-243367	19960913

AB The title device is a vertical type overflow drain one having an epitaxial layer with reversed elec. conductivity to a semiconductor substrate and a photo-elec. conversion region to form an overflow barrier. The device has a ring-shaped region around the device with the same conductivity with the semiconductor substrate and **photo-elec.** conversion region, and a **voltage** is applied between the ring-shaped region and semiconductor substrate and the overflow barrier-forming epitaxial layer to empty the region between the ring-shaped region and semiconductor substrate. The invention can prevent the leak current since the empty region between the ring-shaped region and semiconductor substrate cause no voltage difference between PN joint.

L7 ANSWER 30 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:399929 CAPLUS
DOCUMENT NUMBER: 127:43293
TITLE: Photodetectors driven at low bias voltage
INVENTOR(S): Hiroe, Akihiko
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09107122	A2	19970422	JP 1995-290351	19951012
PRIORITY APPLN. INFO.:			JP 1995-290351	19951012

AB The title **detectors** comprise series-connected unidirectional and rectifying ≥ 2 **semiconductor** components which give variation of current-voltage characteristics upon **photo** reception and are impressed by bias **voltage**. The arrangement gives the **detectors** significantly increased **photo-sensitivity** without use of a high bias **voltage**.

L7 ANSWER 31 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:650947 CAPLUS

DOCUMENT NUMBER: 125:344131

TITLE: Multifractal point defects' clusters in subsurface damaged layer of semiconductor wafers.

AUTHOR(S): Fedtchouk, Alexander P.; Rudenko, Ruslana A.; Fedtchouk, Andrew A.

CORPORATE SOURCE: Physical Department, Odessa State University, Odessa, 270110, Ukraine

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1996), 2874 (Microelectronic Manufacturing Yield, Reliability, and Failure Analysis II), 341-351

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors have constructed an automated laser scanning complex oriented to **semiconductor** wafers defectiveness **monitoring**. The surface **photo-voltage** method proved to be **sensitive** to various types of surface contamination and damages. The fractal approach used for the 1st time for theor. maximal value of VLSI yield estimation demonstrated high prognostic ability.

L7 ANSWER 32 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:650900 CAPLUS

DOCUMENT NUMBER: 125:344126

TITLE: Implementing surface **photo-voltage** in manufacturing

AUTHOR(S): Simard-Normandin, Martine

CORPORATE SOURCE: Centre Microanalysis Nortel North America, Ottawa, ON, Can.

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1996), 2877 (Optical Characterization Techniques for High-Performance Microelectronic Device Manufacturing III), 186-197

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The acquisition of a surface **photo-voltage** (SPV) instrument is only one step in the implementation of a metallic contamination reduction program. In order to take manufacturing decisions based on surface **photo-voltage** data, one must understand the strengths and limitations of the technique and avoid its pitfalls. We will review the steps taken to implement SPV in our fab.

L7 ANSWER 33 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1996:459956 CAPLUS
 DOCUMENT NUMBER: 125:234137
 TITLE: Photo-e.m.f. measurements of organic and inorganic crystals
 AUTHOR(S): Israel, G.; Mueller, F. W.
 CORPORATE SOURCE: Inst. Organische Chemie, Martin Luther Univ. Halle-Wittenberg, Merseburg, D-06217, Germany
 SOURCE: Journal of Information Recording (1996), 22(5-6, 14th Conference Photochemistry Section of the Society of German Chemists, 1995, Pt. 1), 435-438
 CODEN: JIREFL; ISSN: 1025-6008
 PUBLISHER: Gordon & Breach
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Organic and inorg. crystals may produce short-living photo induced electromotive force signals (photo-e.m.f.) on laser pulse excitation. In some cases the **photo-voltage** will change its sign within the deactivation process. This unusual behavior can be interpreted in terms of two independent charge forming processes. Photo-e.m.f. **measurements** from mixts. of n/p-type **semiconducting** dye pigments and AgBr crystals with different surface potentials were discussed.

L7 ANSWER 34 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1996:360506 CAPLUS
 DOCUMENT NUMBER: 125:73059
 TITLE: Characterization of semiconductors by laser-generated photocharge voltage spectroscopy
 AUTHOR(S): Park, Nam-Chun; Abbate, A.; Das, P.
 CORPORATE SOURCE: College of Engineering, Kyungnam University, Masan, 631-701, S. Korea
 SOURCE: Institute of Physics Conference Series (1996), 145(Compound Semiconductors 1995), 593-598
 CODEN: IPCSEP; ISSN: 0951-3248
 PUBLISHER: Institute of Physics Publishing
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A new technique for evaluating the elec. properties of **semiconductor** wafers and devices using laser-generated **Photo-Charge Voltage(PV) measurements** is presented. The technique is based on the **measurement** of the change in the surface elec. charge induced by a modulated laser beam. This charge is **measured** capacitatively as a voltage, whose amplitude depends on the surface properties of the sample. In Photocharge Voltage Spectroscopy **measurements**, the sample is illuminated by both a steady state monochromatic bias light and a pulsed laser. The monochromatic light is used to create a variation in the steady state population of trap levels in the space charge region which does result in a change in the **measured** voltage. A qual. anal. of the proposed **measurement** is presented here along with exptl. results performed on GaAs samples passivated with a thin ZnSe film of variable thicknesses. The decrease in surface recombination velocity of GaAs samples as a function of the thickness was **measured** until a critical thickness is reached.

L7 ANSWER 35 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1996:225067 CAPLUS
 DOCUMENT NUMBER: 124:302357
 TITLE: Optical near-field imaging by force detection
 AUTHOR(S): Hipp, M.; Mertz, J.; Mlynek, J.; Marti, O.
 CORPORATE SOURCE: Universitat Konstanz, Konstanz, D-78434, Germany
 SOURCE: NATO ASI Series, Series E: Applied Sciences (1995),

300 (Photons and Local Probes), 109-22
CODEN: NAESDI; ISSN: 0168-132X

PUBLISHER: Kluwer
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A scanning force microscope (SFM) is used to **detect** near field light by a mechanism based on optical modulation of the image force between a **semiconducting** probe tip and a glass surface. The modulation stems from a phenomenon called surface **photo-voltage** (SPV). The performance of the mechanism for near-field microscopy is demonstrated by imaging a standing evanescent light wave and profiling structured samples. A simple theor. model is described which yields a good agreement with exptl. results. As a first application of this technique imaging results on light induced space charge gratings in photorefractive materials are presented.

L7 ANSWER 36 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:210362 CAPLUS

DOCUMENT NUMBER: 124:275355

TITLE: On the recombination behavior of iron in moderately boron-doped p-type silicon

AUTHOR(S): Walz, D.; Joly, J.-P.; Kamarinos, G.

CORPORATE SOURCE: LETI, MEL-CENG, Grenoble, F-38054, Fr.

SOURCE: Applied Physics A: Materials Science & Processing (1996), 62(4), 345-53

CODEN: APAMFC

PUBLISHER: Springer

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The recombination lifetime and diffusion length of intentionally iron-contaminated samples were **measured** by the Surface **Photo Voltage** (SPV) and the Elymat technique. The lifetime results from these techniques for intentionally iron-contaminated samples were analyzed, in particular for the aspect of the injection-level dependency of recombination of lifetime. Based on theor. considerations, a method for the anal. of deep-level parameters combining constant photon flux SPV and Elymat **measurements** has been developed. This method is based on a detailed numerical anal. of the Elymat technique, including the Dember elec. field, the characteristics of the laser beam, the transport parameters of the **semiconductor** and multilevel Shockley-Read-Hall (SRH) recombination kinetics. The results of the numerical simulation are applied to the anal. of recombination lifetime **measurements** on intentionally iron-contaminated samples. The authors compared numerical simulations and exptl. results from SPV and Elymat for p-type samples using the classical acceptor level at $E_v + 0.1$ eV and the donor level of FeB pairs at EC -0.3 eV as recombination center. Better consistency in the interpretation of the results has been found in the doping range 10^{14} - 10^{16} cm⁻³ supposing the EC -0.3 eV level as predominant recombination center. An attempt to extract the electron and hole capture cross-sections for this defect is made.

L7 ANSWER 37 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:991197 CAPLUS

DOCUMENT NUMBER: 124:103119

TITLE: Contactless characterization of **semiconductors** using laser-induced surface **photo-charge voltage measurements**

AUTHOR(S): Abbate, A.; Rencibia, R.; Ivanov, O.; Masini, G.; Palma, F.

CORPORATE SOURCE: Developmental and Engineering Cent., Army Armament Res., Watervliet, NY, USA

SOURCE: Report (1995), ARCCB-TR-95004; Order No. AD-A293618, 16 pp. Avail.: NTIS
From: Gov. Rep. Announce. Index (U. S.) 1995, 95(22),

Abstr. No. 22-01,244

DOCUMENT TYPE:

Report

LANGUAGE:

English

AB A new technique to evaluate the elec. properties of **semiconductor** wafers and devices using surface **photo-charge voltage** (SPCV) **measurements** is presented. SPCV **measures** the change in the surface elec. charge induced by a chopped laser light whose photon energy exceeds the band gap energy of the **semiconductor** sample. This charge is **measured** capacitatively; thus, SPCV **measurements** do not require the fabrication of metal contacts. In photocharge voltage spectroscopy **measurements**, the SPCV is **measured** as a function of the energy of a subband gap monochromatic steady-state illumination, and its derivative spectrum is associated with the d. of surface states. A qual. anal. of the proposed **measurement** is presented along with exptl. results performed on gallium arsenide samples passivated with a thin zinc selenide film of variable thickness. The proposed technique is completely contactless, and it can be used as an in-line nondestructive characterization of **semiconductor** wafers during the various stages of integrated-circuits fabrication.

L7 ANSWER 38 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:918473 CAPLUS

DOCUMENT NUMBER: 124:19200

TITLE: Surface photovoltage monitoring of silicon surface native and chemical oxides following wafer cleaning and rinsing operations

AUTHOR(S): Rosato, John J.; Hall, R. Mark; Parry, Thad B.; Lindquist, Paul G.; Jarvis, Taura D.

CORPORATE SOURCE: Santa Clara Plastics, Boise, ID, 83704, USA
SOURCE: Materials Research Society Symposium Proceedings (1995), 386 (Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation), 47-54

CODEN: MRSPDH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report on the use of the Surface **Photo Voltage** (SPV) technique to monitor the Si surface bonding arrangement, and the impurity metallic contamination level prior to critical diffusion processes via the indirect measurement of surface charge and diffusion length, resp. The effectiveness of the pre-diffusion wet chemical cleaning and rinsing sequences can be accurately monitored via the real-time, nondestructive SPV measurement. In particular the nature of the surface passivation/chemical oxide formed during the cleaning and rinsing operations can be monitored by quant. surface charge measurements. The importance of the prior wafer history is highlighted, as is the role of the Si starting material and measurement parameters.

L7 ANSWER 39 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:649281 CAPLUS

DOCUMENT NUMBER: 123:272143

TITLE: Contactless characterization of **semiconductors** using laser-induced surface **photo-charge voltage measurements**

AUTHOR(S): Abbate, A.; Rencibia, P.; Ivanov, O.; Masini, G.; Palma, F.; Das, P.

CORPORATE SOURCE: Benet Labs, Watervliet, NY, 12189-4050, USA
SOURCE: Materials Science Forum (1995), 173-174, 221-6
CODEN: MSFOEP; ISSN: 0255-5476

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new technique for evaluating the elec. properties of

semiconductor wafers and devices using Surface Photo-Charge Voltage (SPCV) **measurements** is here presented. SPCV **measures** the change in the surface elec. charge induced by a chopped laser light whose photon energy exceeds the bandgap energy of the **semiconductor** sample. In Photo-Charge Voltage Spectroscopy **measurements** the SPCV is **measured** as a function of the energy of a sub-bandgap monochromatic steady-state illumination, and its derivative spectrum is associated with the d. of surface states. A qual. anal. of the proposed **measurement** is here presented along with exptl. results performed on GaAs samples passivated with a thin ZnSe film of variable thickness. The proposed technique is completely contactless and it can be used as an in-line nondestructive characterization of **semiconductor** wafers during the various stages of integrated circuits fabrication.

L7 ANSWER 40 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:90537 CAPLUS
DOCUMENT NUMBER: 118:90537
TITLE: Light-output restriction devices for optical communication systems and restrction of light-output
INVENTOR(S): Koizumi, Yoshihiro
PATENT ASSIGNEE(S): NEC Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04178614	A2	19920625	JP 1990-307642	19901114
JP 2940146	B2	19990825		

PRIORITY APPLN. INFO.: JP 1990-307642 19901114

AB The device consists of **semiconductor** layers in which a photo-absorption layer is sandwiched by a p- and an n-layer having forbiden bands larger than that of the photo-absorption layer, a **semiconductor** photo-absorption device which applies a **voltage** to the photo-absorption layer, a **detector** for photo-current from the photo-absorption device corresponding to intensity of incident light, a voltage comparator, and a sequential multiplier which restricts the voltage to be applied to the photo-absorption layer based on signals from the comparator. The **semiconductor** photo-absorption device may be formed on a **semiconductor** substrate on which a **semiconductor** laser or a **semiconductor** optical **detector** is formed. Photo-absorption is changed according to the incidence into the photo-absorption device and light-output from the photo-absorption device is kept below a desired level.

L7 ANSWER 41 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:437841 CAPLUS
DOCUMENT NUMBER: 117:37841
TITLE: Tungsten diselenide-based Schottky junctions: the effect of polyiodide treatment on junction behavior
AUTHOR(S): Hodes, G.; Watkins, E.; Mantell, D.; Brillson, L. J.; Peisach, M.; Wold, A.
CORPORATE SOURCE: Dep. Mater. Interf., Weizmann Inst. Sci., Rehovot, 76100, Israel
SOURCE: Journal of Applied Physics (1992), 71(10), 5077-88
CODEN: JAPIAU; ISSN: 0021-8979
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effect of polyiodide solution treatment on WSe2 - both n and p type - prior to Schottky junctions formation, was studied. The junctions were

characterized mainly by (photo)current/voltage and spectral response **measurements**. Barrier heights of >1 V were found [Eg(WSe₂) .apprx. 1.2 eV]. Some iodine species (the nature of which has not been conclusively identified) exist to considerable depths (10^{-6} - 10^{-5} cm) in the WSe₂, and the I uptake is much faster and more extensive on defects (c faces) than on the van der Waals (c) face, if indeed it is adsorbed on the latter at all. The surface charge differs between the 2 faces for both the nontreated and I-treated cases. The results are consistent with a passivation mechanism whereby some I species at the defects chemical attack the deposited metal (Au,Al), effectively removing the metal/defect-**semiconductor** junctions which short the good diode behavior of the greater part of the surface. The main effect of the defects is to decrease the photovoltage by increasing the dark forward current. The assignment of these defects as recombination centers, as is usually believed to be their main effect on these photovoltaic cells, while often (though not always) important, is secondary to their effect on the dark forward current.

L7 ANSWER 42 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:130326 CAPLUS

DOCUMENT NUMBER: 112:130326

TITLE: Characteristic lengths for transport in illuminated intrinsic hydrogenated amorphous silicon (a-Si:H)

AUTHOR(S): Shah, Arvind V.; Sauvain, Evelyne; Hubin, Jacques

CORPORATE SOURCE: Inst. Microtech., Univ. Neuchatel, Neuchatel, 2000, Switz.

SOURCE: Journal of Non-Crystalline Solids (1989), 114(2), 402-4

CODEN: JNCSBJ; ISSN: 0022-3093

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The 5 coupled differential equation that describe one-dimensional transport in **semiconductor** are linearized, using a small-signal approach. The general homogeneous solution of this system of differential equations has 4 characteristic lengths. Considering diffusion and drift sep., they reduce to 2 characteristic length L_+ and L_- . Furthermore, a material parameter allows one to distinguish between two different behaviors: the relaxation and the lifetime-type material. In lifetime-type material, it is the ambipolar drift or diffusion length that dominates transport. The dielec. relaxation lengths governs space-charge, if any. These theor. results are discussed in the exptl. framework of hole/ambipolar $\mu\tau$ **measurements** such as steady state photocarrier grating (SSPG), surface **photo voltage** (SPV), and steady-state Hecht plot (SSHP). Of these, SSPG is considered the only reliable method to **measure** small-signal $\mu\tau$.

L7 ANSWER 43 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:120947 CAPLUS

DOCUMENT NUMBER: 108:120947

TITLE: Automated measurements of characteristics for electrodeposited cadmium selenide based photoelectrodes

AUTHOR(S): Krasnov, Yu. S.; Vas'ko, A. T.; Tsikovkin, E. M.

CORPORATE SOURCE: Inst. Obshch. Neorg. Khim., Kiev, USSR

SOURCE: Ukrainskii Khimicheskii Zhurnal (Russian Edition) (1987), 53(10), 1053-8

CODEN: UKZHAU; ISSN: 0041-6045

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The automation of **measuring** of the **semiconductor** material properties with the use of the microcomputer is proposed. The CdSe films were prepared from the acidic solution containing Cd(II) and Se(IV). The photoelec. **measurements** were carried out in solution containing Na₂S, S and KOH. The effect of annealing of CdSe film at 400° in

air was examined

L7 ANSWER 44 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:625370 CAPLUS
DOCUMENT NUMBER: 103:225370
TITLE: Comparison of high-field stress effects in metal-oxide-**semiconductor** structures with aluminum and polycrystalline silicon gates using internal photoemission **measurements**
AUTHOR(S): Heyns, M. M.; De Keersmaecker, R. F.
CORPORATE SOURCE: ESAT Lab., Kathol. Univ. Leuven, Heverlee, B-3030, Belg.
SOURCE: Journal of Applied Physics (1985), 58(10), 3936-9
CODEN: JAPIAU; ISSN: 0021-8979
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effects of high-field stressing (9-10 MV/cm) with pos. gate voltage on charges and defects in the SiO₂ layer of MOS structures are reported. In Al-gate devices neg. charge builds up near the Si-SiO₂ interface whereas pos. charge is generated near the Al-SiO₂ interface. Subsequent avalanche injection of electrons into the oxide does not annihilate the pos. charge, but the neg. charge disappears. Similar studies were performed on polycryst. Si gate devices for which internal photoemission (**photo current-voltage**) measurements are reported for the first time. In this case a neg. charge distribution was observed near both SiO₂ interfaces after a pos. stress and addnl. electron traps were created near the noninjecting polycryst. silicon/SiO₂ interface. Similarly, a neg. stress for a polycryst. Si gate device creates electron traps near the substrate Si-SiO₂ interface, as reported previously for Al-gate devices.

L7 ANSWER 45 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:184256 CAPLUS
DOCUMENT NUMBER: 94:184256
TITLE: Effect of bias voltage on the anisotropy of the photoresponse of n-p-zinc germanium phosphide (n-p-ZnGeP₂) homodiodes
AUTHOR(S): Rud, Yu. V.; Masagutova, R. V.
CORPORATE SOURCE: Fiz.-Tekh. Inst. im. Ioffe, Leningrad, USSR
SOURCE: Fizika i Tekhnika Poluprovodnikov (Sankt-Peterburg) (1981), 15(3), 439-47
CODEN: FTTPA4; ISSN: 0015-3222
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The photoelec. properties of n-p-ZnGeP₂ diode structures were investigated as a function of bias voltage in natural and linearly polarized light. In the photoresponse of direct-biased structures, a sign inversion of the photocurrent was observed, during which the characteristic energy .plcnst. ω i depends on the polarization of the incident radiation. In structures with a polarization-controlled sign of the photocurrent, the coefficient of photopleochroism sharply decreases at some characteristic value of .plcnst. $\omega\infty$, which is the basis for the reaction on anisotropic **semiconductors** of highly **sensitive** narrow-band photoanalyzers with an elec.-field-readjustable spectral range.

L7 ANSWER 46 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1979:621276 CAPLUS
DOCUMENT NUMBER: 91:221276
TITLE: Electron trapping in silicon dioxide at 295 and 77°K
AUTHOR(S): Young, D. R.; Irene, E. A.; Di Maria, D. J.; De Keersmaecker, R. F.; Massoud, H. Z.
CORPORATE SOURCE: T. J. Watson Res. Cent., IBM, Yorktown Heights, NY, 10598, USA

SOURCE: Journal of Applied Physics (1979), 50(10), 6366-72
CODEN: JAPIAU; ISSN: 0021-8979

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The electron trapping behavior of SiO₂ was **measured** as a function of thickness at 295 and 77 K. The devices used were metal-oxide-**semiconductor** devices with the SiO₂ grown thermally. Bulk traps are dominant at 295 K and traps associated with the Si-SiO₂ interface are dominant at 77 K. The effect of processing conditions was also studied and the optimum conditions are different for the 2 temps. used for the **measurements**. These observations were verified by using a **photo current-voltage** technique. The generation of donor states in the SiO₂ near the Si-SiO₂ interface was observed as a result of the electron current through the SiO₂.

L7 ANSWER 47 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1965:428662 CAPLUS

DOCUMENT NUMBER: 63:28662

ORIGINAL REFERENCE NO.: 63:5085b-e

TITLE: Electrochemical and surface studies of Zn and InSb single crystals

AUTHOR(S): Chance, D. A.; Nobe, Ken

SOURCE: Calif. Univ., Water Resources Center, Contrib. (1963), No. 80, 79 pp.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The photogalvanic or Becquerel effect of Zn and InSb electrodes was studied. **Photo**-electromotive force and the current-**voltage** characteristics, the differential capacitances, and the influence of the electrode film thickness were **measured** simultaneously on the same electrode. The electrode-electrolyte systems investigated were the (001) surface of Zn in 0.1N Na₂S and the (111) Sb surface of InSb in N NaOH. For Zn, different sets of **measurements** were performed at various immersion times up to 28 days, whereas the InSb electrodes were anodized to different film thicknesses. Current-voltage characteristics were obtained by using short-time (<1 min.), constant-current pulses and observing the potential change. In the case of Zn electrodes, extrapolated potentials from linear potential-time responses to zero time were used. Linear current-voltage characteristics were observed up to 100 mv. overvoltage. For InSb electrodes steady-state overvoltages were obtained, but the reactions observed from the Tafel slopes indicated the existence of several adsorbed species on the electrode surface. Anodized InSb electrodes decayed to the original "clean" electrode equilibrium potential of -0.82 v. vs. SCE. Different properties were exhibited during the potential decay from those at equilibrium. A **semiconductor** film formed on the electrodes considered was necessary for the observation of a photo-electromotive force. The effect of light on the **semiconductor** film was the generation of electrons, holes, or electron-hole pairs and a consequent increase in the conductivity of the film. In the case of Zn electrodes and anodized InSb electrodes immediately after anodization, the flow of electrons or holes to the **semiconductor**-solution interface had a pronounced effect on the photo-electromotive force, owing to an electron or hole exhaustion condition at the interface and the subsequent effect on the exchange currents and mixed potentials. In the case of Zn the electrode film was essentially ZnS with an addition of ZnO as seen from spectral response observations. Anodized InSb oxide film was postulated to be a mixture of In₂O₃ and Sb₂O₃. For Zn electrodes, the magnitude of the photo-emfs. was observed to change inversely as the exchange c. ds. and to increase as the equilibrium potential increased pos. A cutoff frequency for the photo-electromotive force occurred in the vicinity of 3.6 ev.

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L4 ANSWER 1 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:1150186 CAPLUS
 TITLE: Voltage **detector**, electric power unit and
semiconductor device [Machine Translation].
 INVENTOR(S): Hachiya, Yoshiaki
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005300376	A2	20051027	JP 2004-117898	20040413
PRIORITY APPLN. INFO.:			JP 2004-117898	20040413

AB [Machine Translation of Descriptors]. Electric power low electric power consumption conversion and voltage detection precision improvement of the voltage detector in order to control in the voltage which desires the voltage of the terminal which is supplied, low ripple voltage, and number of articles decrease are actualized. The output signal of the error amplifier 5 which possesses with the detection terminal where the reference terminal and the terminal VO2 for voltage detection where the voltage which does not possess temperature characteristic fluctuation is impressed are connected is transmitted to the control terminal of switching device 6. Is outputted to detection signal output terminal PC voltage fluctuation of terminal VO2 for voltage detection minds error amplifier 5, fixed current source 4, by the V-I translate circuit which consists of the current mirror circuit which switching device 6, and switching device consists of 7 and switching device 8, as the electric current signal. This signal is transmitted to outside with **photo** coupler 14, **voltage** of output **voltage** terminal VOUT is controlled.

L4 ANSWER 2 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:1110689 CAPLUS
 DOCUMENT NUMBER: 143:470735
 TITLE: Effect of the load resistance in the linearity and sensitivity of MIS position sensitive detectors
 AUTHOR(S): Aguas, H.; Pereira, L.; Raniero, L.; Fortunato, E.; Martins, R.
 CORPORATE SOURCE: Departamento de Ciencia dos Materiais/CENIMAT, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa, Caparica, 2829-516, Port.
 SOURCE: Materials Research Society Symposium Proceedings (2005), 862(Amorphous and Nanocrystalline Silicon Science and Technology--2005), 691-696
 CODEN: MRSPDH; ISSN: 0272-9172
 PUBLISHER: Materials Research Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The linearity and sensitivity of the position sensitive detectors (PSD) are dependent on the resistance of the collecting layer and of the load

resistance, mainly if the detection is based on the measurement of the **photo-lateral voltage**. To determine the value of the load resistance to be used in metal - insulator - **semiconductor** (MIS) PSDs structures that lead to the maximum value of **sensitivity** and linearity, we propose an elec. model through which it is able to simulate the proper **sensor** response and how the load resistance influence the results obtained. This model is valid for PSDs where the resistance of the collecting resistive layer is quite low ($\leq 500 \Omega$), leading to a low output impedance. The value of the load resistance should be of about 1 k Ω to achieve a good compromise between the linearity and the sensitivity of the PSD. This result is in agreement with the set of expts. performed.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1109446 CAPLUS

DOCUMENT NUMBER: 144:159768

TITLE: Numerical simulation of GaAs MESFET photodetector for OEIC receivers

AUTHOR(S): Muthusamy, Madheswaran; Kuppusamy, Kalaiarasi

CORPORATE SOURCE: Department of Electronics and Communication Engineering, P.S.N.A. College of Engineering and Technology, Dindigul, 62422, India

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2005), 5881(Infrared and Photoelectronic Imagers and Detector Devices), 588104/1-588104/8

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A two-dimensional numerical model of GaAs MESFET with non uniform doping is developed and various characteristics are estimated under different illumination conditions. The Poisson's equations in the gate depletion region and the space charge region of the channel substrate junctions are solved numerically under dark and illumination condition. The **photo induced voltages** at the schottky contact (V_{op}) as well as at the junction between channel and substrate (V_{ops}) are calculated for estimating the channel voltage profile and the drain current characteristics. It has been seen that the depletion widths are strongly influenced by illumination and hence the characteristics. The model developed here can be used to obtain the drain and the transfer characteristics under dark and illuminated conditions. The device parameters such as transconductance and gate to source capacitance are numerically estimated to examine the switching characteristics of the device. The photo current has also been estimated and the responsivity of the device has been calculated. The responsivity is found to be very high. The switching speed has also increased under illumination because of the decrease in the RC time constant. It has been concluded that the two dimensional modeling provides better accurate solution and closely fit with the exptl. results. The model can be used as basic tool for accurate simulation of MESFET photodetector for OEIC applications.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1096618 CAPLUS

TITLE: LED type signal light vessel [Machine Translation].

INVENTOR(S): Ikeda, Kenji; Nakayasu, Kazuyuki

PATENT ASSIGNEE(S): Koito Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005285527	A2	20051013	JP 2004-97337	20040330
PRIORITY APPLN. INFO.:			JP 2004-97337	20040330

AB [Machine Translation of Descriptors]. You can do modulated light appropriately according to plain air, it is natural and the LED type signal light vessel which can do the modulated light which does not have strange feeling is offered. Rectifying commercial business power source P, the LED type signal light vessel 10 which it tries to supply electric power to LED which gives out the light light for the signal, the full-wave rectification section 30 which rectifies commercial business power source P and fixed electric current section it has 40 and modulated light control section 50, it is something which electric power offering/accompanying is provided to LED by the fact that fixed electric current section 40 receives the output of full-wave rectification section, 30 impresses the reference voltage by fixed voltage element 41 in output **semiconductor** 45, as for modulated light control section 50, in fixed electric current section 40 reference voltage of the fixed voltage element 41 In order to lie between with the edge A and output **semiconductor** 45, when distribution facilities it is done, the photo **sensor** it has with 55 which **detects** plain air and amplifier 51, it expands the output of **photo sensor** 55 with amplifier 51, daytime the **voltage** which is equal to reference voltage impresses in output **semiconductor**, 45 becomes dark changing the output of fixed electric current section 40 due to the fact that the voltage which is lower than reference voltage impresses in output **semiconductor** 45, modulated light it does LED.

L4 ANSWER 5 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:651855 CAPLUS
DOCUMENT NUMBER: 143:142541
TITLE: Method for semiconductor material specific property characterization and its system
INVENTOR(S): Zhang, Yonggang; Li, Aizhen; Qi, Ming
PATENT ASSIGNEE(S): Shanghai Inst. of Microsystem and Information Technology, CAS, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1556390	A	20041222	CN 2003-10122883	20031230
PRIORITY APPLN. INFO.:			CN 2003-10122883	20031230

AB In the invention, two or more dim light monochromators are used, and photoconduction, **photo-voltage** or photo capacitance of material are as response signal. Relation between modulation frequency of light source and amplitude of response signal is measured under frequency-changing modulation is carried out for measuring light source by using phase locking amplification technique. Measured data are fitted so as to obtain data about materials characteristics. Disclosed system is composed of two or more dim light monochromators and optical path of reflector for switching wavelength; optical modulator, bias power supply, bias network and sample holder; lock-in-amplifier for detecting weak signal and record of collected data controlled by computer. The invention is suitable to **measurement** and characterization of

semiconductor characteristic such as each film, epitaxy
microstructure and dimensional material.

L4 ANSWER 6 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:439000 CAPLUS
TITLE: A new well capacity adjusting scheme for high
sensitivity, extended dynamic range CMOS imaging pixel
sensors
AUTHOR(S): Lai, Cheng-Hsiao; Yu, Yueh-Ping; King, Ya-Chin
CORPORATE SOURCE: Microelectronics Laboratory, Semiconductor Technology
Application Research (STAR) Group, Department of
Electrical Engineering, National Tsing-Hua University,
Hsin-Chu, 300, Taiwan
SOURCE: Japanese Journal of Applied Physics, Part 1: Regular
Papers, Brief Communications & Review Papers (2005),
44(4B), 2214-2216
CODEN: JAPNDE
PUBLISHER: Japan Society of Applied Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An embedded 3T active-pixel complementary metal oxide
semiconductor (CMOS) image **sensor**, fabricated with a
standard 0.25- μ m CMOS logic process with new well capacity adjusting scheme
is proposed to extend dynamic range. The photo-sensing device consists of
a photo-gate area and a photo-diode, and the well capacity is adjusted by
controlling the pulse voltage on the photo-gate. Besides, the imaging
sensitivity can be improved through optimizing the photo-gate to
photo-diode area ratio and the pulse high level of **photo-gate**
voltage. The exptl. results demonstrate that the pixel can
achieve both high sensitivity at low illumination and extended dynamic
range of 25 dB under high illumination.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:712612 CAPLUS
DOCUMENT NUMBER: 141:342481
TITLE: A high sensitivity nitric dioxide sensor based on
MCM-41 incorporation of tin
AUTHOR(S): Yuliarto, Brian; Zhou, HaoShen; Honma, Itaru;
Katsumura, Yosuke
CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute,
National Institute of Advanced Industrial Science and
Technology, Tsukuba-shi, Ibaraki, 305-8568, Japan
SOURCE: Chemical Sensors (2004), 20(Suppl. B), 608-609
CODEN: KAGSEU
PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A self-ordered and structure controlled mesoporous MCM-41 incorporation of
tin film was 1st prepared by a mol. surfactant template method using spin
coating. Surface **photo voltage** (SPV) NO₂ gas
sensor was then fabricated by the self-ordered tin-modified MCM-41
film based on a metal-insulator-**semiconductor** (MIS) structure.
The high sensitivity of the mesoporous MCM-41 incorporation of tin was
obtained at the NO₂ gas concns. ≥ 350 ppb at room temperature The
sensor's responsiveness was also studied.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:629778 CAPLUS
DOCUMENT NUMBER: 141:318688
TITLE: Experimental and Theoretical NO_x Physisorption

Analyses of Mesoporous Film (SBA-15 and SBA-16)
Constructed Surface **Photo Voltage**
(SPV) Sensor

AUTHOR(S): Yamada, Takeo; Zhou, HaoShen; Uchida, Hidekazu; Honma, Itaru; Katsube, Teruaki
CORPORATE SOURCE: Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, 305-8568, Japan
SOURCE: Journal of Physical Chemistry B (2004), 108(35), 13341-13346
CODEN: JPCBFK; ISSN: 1520-6106
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Mesoporous silica films with hexagonal (SBA-15) and cubic (SBA-16) mesostructures have been successfully employed to fabricate surface **photo voltage** (SPV) sensors for NO₂ gas. These SPV sensors exhibited better sensitivity (S) in 50 ppm NO₂ gas than in 100 ppm NO gas. SPVs with SBA-16 film showed better sensitivity in 1 ppm NO₂ gas than in 1 ppm NO gas. These phenomena can be explained by the phys. adsorption of the target gas into the mesoporous layer, which is regarded as the insulator layer in metal-insulator-semiconductor (MIS) devices.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:338357 CAPLUS
DOCUMENT NUMBER: 141:229448
TITLE: Effect of metal transition addition on mesoporous

MCM-41 SPV NO₂ gas sensor

AUTHOR(S): Yuliarto, Brian; Zhou, Hao-Shen; Honma, Itaru; Katsumura, Yosuke
CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba-shi, Ibaraki, 305-8568, Japan
SOURCE: Chemical Sensors (2003), 19(Suppl. B), 193-195
CODEN: KAGSEU
PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Some transition metals (tin, vanadium, and tungsten) were introduced into the mesoporous silica films by sol-gel spin-coating using direct synthesis method. The film structure was characterized by x-ray Ray Diffraction (XRD), N₂ isotherm, and Transmission Electron Microscope (TEM) analyses. The resulting films were then prepared as surface **photo voltage** (SPV) **sensor** devices, which is based on metal-insulator-**semiconductor** structure. The effect of transition metals incorporated on the mesoporous layer structure was studied and related to the NO₂ gas sensing properties.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:964157 CAPLUS
DOCUMENT NUMBER: 140:312774
TITLE: UV **detector** based on pn-heterojunction diode composed of transparent oxide **semiconductors**, p-NiO/n-ZnO

AUTHOR(S): Ohta, Hiromichi; Kamiya, Masao; Kamiya, Toshio; Hirano, Masahiro; Hosono, Hideo
CORPORATE SOURCE: ERATO, Hosono Transparent ElectroActive Materials Project, JST, Takatsu, Kawasaki, 213-0012, Japan
SOURCE: Thin Solid Films (2003), 445(2), 317-321
CODEN: THSFAP; ISSN: 0040-6090

PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A transparent UV-detector was fabricated using a high-quality pn-heterojunction diode composed of transparent oxide semiconductors, p-type NiO and n-type ZnO, and its UV-response was measured at room temperature. Transparent tri-layered oxide films of ZnO/NiO/ITO were heteroepitaxially grown on an YSZ (1 1 1) substrate by a pulsed-laser-deposition combined with a solid-phase-epitaxy technique and they were processed to fabricate a p-NiO/n-ZnO diode. The diodes exhibited a clear rectifying I-V characteristic with an ideality factor of .apprx.2 and a forward threshold voltage of .apprx.1 V. Although the photo-responsivity was fairly weak at the zero bias voltage, it was enhanced up to .apprx.0.3 A W⁻¹ by applying a reverse bias of -6 V under an irradiation of 360-nm light, which is comparable to that of com. devices.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:649863 CAPLUS

DOCUMENT NUMBER: 140:21016

TITLE: Design and optimization of InGaAs/InP photodetector for coordinate sensitive detection systems

AUTHOR(S): Purica, M.; Budianu, E.; Grozescu, I.; Rusu, E.; Slobodchikov, S. V.

CORPORATE SOURCE: National Institute for Research and Development of Microtechnologies, Bucharest, Rom.

SOURCE: EDMO 2001, International Symposium on Electron Devices for Microwave and Optoelectronic Applications, 9th, Vienna, Austria, Nov. 15-16, 2001 (2001), 113-118. Institute of Electrical and Electronics Engineers: New York, N. Y. CODEN: 69EIY3; ISBN: 0-7803-7049-X

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The quadrant p-i-n photodiode and the position sensing detector based on the longitudinal photoeffect are the most suitable photodetectors structure for coordinate sensitive detection systems. The optimization of a quadrant p-i-n photodiode structure on InGaAs/InP heterostructures, suited for IR laser telemetry and optical centering applications, taking into account the influence of material characteristics and structure parameters on the photoresponse is presented. The dependence of the longitudinal photo-voltage in In_{0.53}Ga_{0.47}As p-n junction on the coordinate x of the light spot and temperature was studied. A linear dependence $V_{phl} = f(x)$ was observed and the V_{phl} temperature dependence in the 100-300 K range is determined by carrier mobility change. The quadrant p-i-n photodetectors shows the wide spectral characteristics (0.9-1.7) μm with a responsivity of each element of 0.62 A/W and the p-n junction structure presents the slope of the inversion characteristics for the longitudinal photoelec. effect of (0.8-1.0)103 V/W $\cdot\text{mm}$.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:615823 CAPLUS

DOCUMENT NUMBER: 139:316085

TITLE: A possibility of block-copolymer templated mesoporous silica films applied to surface photo voltage (SPV) type NO_x gas sensor

AUTHOR(S): Yamada, T.; Zhou, H. S.; Uchida, H.; Tomita, M.; Ueno, Y.; Katsube, T.; Honma, I.

CORPORATE SOURCE: Energy Electronics Institute, National Institute of

Advanced Industrial Science and Technology, Tsukuba,
Ibaraki, 305-8568, Japan
SOURCE: Studies in Surface Science and Catalysis (2003),
146(Nanotechnology in Mesoporous Materials),
783-786
CODEN: SSCTDM; ISSN: 0167-2991
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A self-ordered hexagonal and cubic-like mesoporous silica film was
successfully fabricated from a Metal-Insulator-Semiconductor
device applied to a Nitrogen oxides (NOx) gas sensor based on
the surface photo voltage system. These self-ordered
mesoporous silica films are synthesized by using a nonionic triblock
copolymer surfactant as a template in spin coating. The sensing
characteristics as a NOx gas sensor are dependent on both mesostructures
and exposure gases.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:363612 CAPLUS
DOCUMENT NUMBER: 139:29814
TITLE: Surface photovoltage of modified mesoporous silica
film for NO2 gas sensor
AUTHOR(S): Yuliarto, O. Brian; Asai, Keisuke; Yamada, Takeo;
Zhou, Hao-Shen; Honma, Itaru
CORPORATE SOURCE: Department of Quantum Engineering and Systems Science,
Graduate School of Engineering, The University of
Tokyo, Tokyo, 113-8656, Japan
SOURCE: Chemical Sensors (2002), 18(Suppl. B), 142-144
CODEN: KAGSEU
PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Modified mesoporous silica film was prepared by direct synthesis method
using sol-gel and spin coating. The surface photo
voltage (SPV) technique was then applied for the tin-modified
silica mesoporous film for NO2 gas sensor. The sensor consists of Au/
modified mesoporous silica/ Si3N4/ SiO2/ Si/ Al. Clear response was
obtained at the NO2 gas concentration ≥ 1 ppm at room temperature The changes
in
the average value and phase of the a.c. photocurrent, and the responsibility
were observed after exposure of NO2 gas to the film sample. Compared with
those of the pure silica mesoporous film, modified mesoporous silica film
showed enhanced sensitivity for NO2 gas sensor.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:569782 CAPLUS
DOCUMENT NUMBER: 137:271289
TITLE: NO and NO2 gas sensors based on surface photovoltage
system fabricated by self-ordered mesoporous silicate
film
AUTHOR(S): Zhou, Hao-Shen; Yamada, Takeo; Asai, Keisuke; Honma,
Itaru; Uchida, Hidekazu; Katsube, Teruaki
CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute,
National Institute of Advanced Industrial Science and
Technology, Tsukuba, Ibaraki, 305-8568, Japan
SOURCE: Studies in Surface Science and Catalysis (2002),
141(Nanoporous Materials III), 623-630
CODEN: SSCTDM; ISSN: 0167-2991
PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The 1st NO and NO₂ gas **sensors** based on surface **photo-voltage** (SPV) **semiconductor** device system are fabricated by the metal/ SiO₂ (self-ordered hexagonal mesoporous) -/Si₃N₄/SiO₂/Si structure. Size controlled silicate hexagonal mesoporous film is successfully synthesized by spin coating on a Si₃N₄/SiO₂/Si silicon wafer using poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (Pluronic P123 =EO20PO70EO20) triblock copolymers as a template. The characteristics of mesoporous film are studied in XRD, TEM. The sensing properties of the self-ordered hexagonal mesoporous SPV system were studied by exposing to the NO or NO₂ gas and air repeatedly. The changes of the average value and phase of the a.c. photocurrent (I_{ph}) were observed between the NO or NO₂ gas and air. The response of the alternatively photocurrent is resulted from the phys. adsorption and chemical interaction between detected NO or NO₂ gas and the self-ordered hexagonal mesoporous film.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:482822 CAPLUS
DOCUMENT NUMBER: 137:40960
TITLE: Chemical image sensor
INVENTOR(S): Ito, Yoshitaka
PATENT ASSIGNEE(S): Shindengen Electric Mfg. Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002181774	A2	20020626	JP 2000-376340	20001211
PRIORITY APPLN. INFO.:			JP 2000-376340	20001211

AB The title device is a light addressable potentiometric **sensor** uses **semiconductor** surface **photo voltage** technique. The 2 dimensional image of chemical species is obtained by radiating the semiconductor substrate plate with an a.c. light beam of coaxial shaped which can be shifted at any position along the diameter direction of the coaxial circle. The device is characterized by having high speed signal processing, miniaturized size, and low cost.

L4 ANSWER 16 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:349250 CAPLUS
DOCUMENT NUMBER: 136:363005
TITLE: Chemical imaging sensor
INVENTOR(S): Ito, Yoshitaka
PATENT ASSIGNEE(S): Shindengen Electric Mfg. Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002131276	A2	20020509	JP 2000-328707	20001027
PRIORITY APPLN. INFO.:			JP 2000-328707	20001027

AB The title **sensor** is prepared by laminating a **semiconductor** layer and an insulation layer on a transparent substrate of sapphire or

quartz. A reference electrode and a counter electrode are formed on the same surface of the sensing unit with an insulation film in between. The photo address elec. potential responding **sensor** is based on the **measurement** of surface photo elec. voltage generated from the **semiconductor** layer due to the formation of electron pos. hole pair in the **semiconductor** layer while the transparent substrate is intermittently irradiated by a light source from its backside.

L4 ANSWER 17 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:287329 CAPLUS

DOCUMENT NUMBER: 137:186507

TITLE: The application of block copolymer templated mesoporous silicate film for SPV gas sensor

AUTHOR(S): Yamada, T.; Zhou, H. S.; Uchida, H.; Zhang, W.; Tomita, M.; Ueno, Y.; Ichino, T.; Honma, I.; Asai, K.; Katsube, T.

CORPORATE SOURCE: National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, 305-8568, Japan

SOURCE: Chemical Sensors (2001), 17(Suppl. B), 300-302
CODEN: KAGSEU

PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Surface **photo voltage** (SPV) **semiconductor**

characterization technique has a great possibility to gas **sensor** application. The mesoporous materials also have a possibility to improve the gas adsorption property of SPV device due to its high surface area and pore channel alignment structure (mesostructure) property. We are succeeded in assembling mesoporous silicate film into SPV device, estimating the NO gas sensing property of them and finding the sensing property strongly depend on mesostructure.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 18 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:819838 CAPLUS

DOCUMENT NUMBER: 136:89643

TITLE: Ordered mesoporous silicate materials from a template of triblock copolymer (II): synthesis of film and application for gas sensor

AUTHOR(S): Zhou, Hao-Shen; Yamada, Takeo; Asai, Keisuke; Honma, Itaru; Uchida, H.; Katsube, T.

CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, 305-8568, Japan

SOURCE: Key Engineering Materials (2002), 206-213(Pt. 3, Euro Ceramics VII), 1985-1988
CODEN: KEMAIE; ISSN: 1013-9826

PUBLISHER: Trans Tech Publications Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Size controlled silicate mesoporous film was successfully synthesized using poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (EOlPOmEOn) triblock copolymers as a template. The mesostructure and d spacing of the mesoporous film can be controlled by the synthesis conditions. The hexagonal mesoporous film can be obtained using Pluronic P123 (EO20PO70EO20) triblock copolymer as a template. The characteristics of mesoporous films were investigated in XRD. A surface **photo voltage** (SPV) system has been applied to the Metal-SiO₂ mesoporous-Si device structure (MIS) to investigated the characteristics as a NO gas sensor.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 19 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:787885 CAPLUS

DOCUMENT NUMBER: 136:105059

TITLE: Photovoltaic response of Tolypothrix tenuis cells and their fragments in photoelectrochemical cell

AUTHOR(S): Wrobel, Danuta; Hanyz, Izabela; Lukasiewicz, Jędrzej

CORPORATE SOURCE: Division of Molecular Physics, Institute of Physics, Poznan University of Technology, Poznan, 60-965, Pol.

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2001), 4413(Epilayers and Heterostructures in Optoelectronics and Semiconductor Technology), 345-351

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have studied spectral properties and photo potential/photo current generation in cyanobacterium Tolypothrix tenuis cells and their fragments in native and DCMU-treated samples. DCMU is known as an inhibitor of charge carrier process which is able to block the electron flow in photo synthetic apparatus. Since there is a competition among radiative, non-radiative and charge separation processes which lead to deactivation of excited states of mols. following spectroscopic methods have been used in the experiment: absorption, **photo** acoustics and **photo voltage** action spectrum (dependence of **photo voltage** on the excitation wavelength). Spectroscopic investigation was accompanied by photoelec. **measurements** for which specially photo- electrochem. cell constructed of **semiconducting** and gold electrodes with Tolypothrix tenuis suspended in polyvinyl alc. - water solution (15%volume/volume) and immersed between them was used. Kinetics of photo current have been examined in time of seconds. Thermal deactivation process in DCMU-free and DCMU- treated cyanobacterium is discussed and participation of various biliproteins and Chl α -complexes in light energy conversion is indicated. It has been shown the influence of DCMU treatment on the photo signal generation in Tolypothrix tenuis cyanobacterium. Tolypothrix tenuis can be used in a system for light energy conversion into elec. energy.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 20 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:496629 CAPLUS

TITLE: Active pixel sensor with high fill factor blooming protection

INVENTOR(S): Guidash, Robert M.

PATENT ASSIGNEE(S): Eastman Kodak Company, USA

SOURCE: U.S., 12 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6259124	B1	20010710	US 1998-130665	19980807
PRIORITY APPLN. INFO.:			US 1998-130665	19980807

AB A **semiconductor** based image **sensor** having a plurality of pixels formed on a surface of the image **sensor**, such that each of the pixels has a photodetector configured to collect majority carriers created from incident light; a region within each of the photodetectors that is narrowed, the narrowed region of the photodetector being electrically coupled to a drain for the majority carriers; a reset

means; a transistor for converting **photo**-charge to **voltage** or current. The narrowed region provides a path for excess photoelectrons in the photodetector to the drain. The narrow regions path to the drain, in the preferred embodiment, is that of the drain used for the adjacent transistor.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 21 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:864549 CAPLUS
 TITLE: Semiconductor image pickup component. [Machine Translation].
 INVENTOR(S): Arima, Hiroshi; Ui, Hirotaka
 PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000340779	A2	20001208	JP 1999-153673	19990601
JP 3514663	B2	20040331		

PRIORITY APPLN. INFO.: JP 1999-153673 19990601

AB [Machine Translation of Descriptors]. In the **semiconductor** image pickup component, like the retina of the organism wide light absorbent **sensitivity** range high contrast inspection function is actualized with simple circuit constitution. The **semiconductor** image pickup component has plural pixel circuits, each pixel circuit two photo **detector** P D1, has with P D2 and resistant Ri, photo **detector** P D1 and photo **detector** P D2 through resistant Ri, is connected in series. Each pixel circuit is connected through resistant Rn, in the connected node 1 of photo detector P D1 and resistant Ri the pixel circuit which adjoins. Is removed **photo** detector PD after **voltage** change of connected node 2 of 2 and resistant Ri is expanded, as the output signal.

L4 ANSWER 22 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:808780 CAPLUS
 TITLE: Storage pixel sensor and pixel sensor array with signal compression
 INVENTOR(S): Merrill, Richard B.; Lyon, Richard F.
 PATENT ASSIGNEE(S): Foveon, Inc., USA
 SOURCE: PCT Int. Appl.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9966560	A1	19991223	WO 1999-US13165	19990610
W: KR				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6512544	B1	20030128	US 1998-98688	19980617

PRIORITY APPLN. INFO.: US 1998-98688 A 19980617

AB A storage pixel **sensor** disposed on a **semiconductor** substrate comprises a photosensor. At least one nonlinear capacitive element is coupled to the photosensor. At least one nonlinear capacitive element is arranged to have a compressive photocharge-to-voltage gain

function. An amplifier has an input coupled to the nonlinear capacitor and an output. Other, non-capacitive elements may be employed to produce a compressive **photo-charge-to-voltage** gain having at least one breakpoint.

L4 ANSWER 23 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:219563 CAPLUS
DOCUMENT NUMBER: 128:315203
TITLE: Solid-state image pickup device
INVENTOR(S): Harada, Koichi
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 10093064	A2	19980410	JP 1996-243367	19960913
JP 3584629	B2	20041104		

PRIORITY APPLN. INFO.: JP 1996-243367 19960913

AB The title device is a vertical type overflow drain one having an epitaxial layer with reversed elec. conductivity to a semiconductor substrate and a photo-elec. conversion region to form an overflow barrier. The device has a ring-shaped region around the device with the same conductivity with the semiconductor substrate and **photo-elec.** conversion region, and a **voltage** is applied between the ring-shaped region and semiconductor substrate and the overflow barrier-forming epitaxial layer to empty the region between the ring-shaped region and semiconductor substrate. The invention can prevent the leak current since the empty region between the ring-shaped region and semiconductor substrate cause no voltage difference between PN joint.

L4 ANSWER 24 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:399929 CAPLUS
DOCUMENT NUMBER: 127:43293
TITLE: Photodetectors driven at low bias voltage
INVENTOR(S): Hiroe, Akihiko
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 09107122	A2	19970422	JP 1995-290351	19951012
			JP 1995-290351	19951012

PRIORITY APPLN. INFO.: JP 1995-290351 19951012

AB The title **detectors** comprise series-connected unidirectional and rectifying ≥ 2 **semiconductor** components which give variation of current-voltage characteristics upon **photo** reception and are impressed by bias **voltage**. The arrangement gives the detectors significantly increased **photo-sensitivity** without use of a high bias **voltage**.

L4 ANSWER 25 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:650947 CAPLUS
DOCUMENT NUMBER: 125:344131
TITLE: Multifractal point defects' clusters in subsurface damaged layer of semiconductor wafers.

AUTHOR(S) : Fedtchouk, Alexander P.; Rudenko, Ruslana A.;
Fedtchouk, Andrew A.
CORPORATE SOURCE: Physical Department, Odessa State University, Odessa,
270110, Ukraine
SOURCE: Proceedings of SPIE-The International Society for
Optical Engineering (1996), 2874 (Microelectronic
Manufacturing Yield, Reliability, and Failure Analysis
II), 341-351
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors have constructed an automated laser scanning complex oriented
to **semiconductor** wafers defectiveness **monitoring**. The
surface **photo-voltage** method proved to be sensitive to
various types of surface contamination and damages. The fractal approach
used for the 1st time for theor. maximal value of VLSI yield estimation
demonstrated high prognostic ability.

L4 ANSWER 26 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:650900 CAPLUS
DOCUMENT NUMBER: 125:344126
TITLE: Implementing surface **photo-voltage**
in manufacturing
AUTHOR(S) : Simard-Normandin, Martine
CORPORATE SOURCE: Centre Microanalysis Nortel North America, Ottawa, ON,
Can.
SOURCE: Proceedings of SPIE-The International Society for
Optical Engineering (1996), 2877 (Optical
Characterization Techniques for High-Performance
Microelectronic Device Manufacturing III), 186-197
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The acquisition of a surface **photo-voltage** (SPV)
instrument is only one step in the implementation of a metallic
contamination reduction program. In order to take manufacturing decisions
based on
surface **photo-voltage** data, one must understand the
strengths and limitations of the technique and avoid its pitfalls. We
will review the steps taken to implement SPV in our fab.

L4 ANSWER 27 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:459956 CAPLUS
DOCUMENT NUMBER: 125:234137
TITLE: Photo-e.m.f. measurements of organic and inorganic
crystals
AUTHOR(S) : Israel, G.; Mueller, F. W.
CORPORATE SOURCE: Inst. Organische Chemie, Martin Luther Univ.
Halle-Wittenberg, Merseburg, D-06217, Germany
SOURCE: Journal of Information Recording (1996), 22(5-6, 14th
Conference Photochemistry Section of the Society of
German Chemists, 1995, Pt. 1), 435-438
CODEN: JIREFL; ISSN: 1025-6008
PUBLISHER: Gordon & Breach
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Organic and inorg. crystals may produce short-living photo induced
electromotive force
signals (photo-e.m.f.) on laser pulse excitation. In some cases the
photo-voltage will change its sign within the
deactivation process. This unusual behavior can be interpreted in terms
of two independent charge forming processes. Photo-e.m.f.

measurements from mixts. of n/p-type **semiconducting** dye pigments and AgBr crystals with different surface potentials were discussed.

L4 ANSWER 28 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:360506 CAPLUS
DOCUMENT NUMBER: 125:73059
TITLE: Characterization of semiconductors by laser-generated photocharge voltage spectroscopy
AUTHOR(S): Park, Nam-Chun; Abbate, A.; Das, P.
CORPORATE SOURCE: College of Engineering, Kyungnam University, Masan, 631-701, S. Korea
SOURCE: Institute of Physics Conference Series (1996), 145(Compound Semiconductors 1995), 593-598
CODEN: IPCSEP; ISSN: 0951-3248
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new technique for evaluating the elec. properties of **semiconductor** wafers and devices using laser-generated **Photo-Charge Voltage(PV) measurements** is presented. The technique is based on the measurement of the change in the surface elec. charge induced by a modulated laser beam. This charge is measured capacitatively as a voltage, whose amplitude depends on the surface properties of the sample. In Photocharge Voltage Spectroscopy measurements, the sample is illuminated by both a steady state monochromatic bias light and a pulsed laser. The monochromatic light is used to create a variation in the steady state population of trap levels in the space charge region which does result in a change in the measured voltage. A qual. anal. of the proposed measurement is presented here along with exptl. results performed on GaAs samples passivated with a thin ZnSe film of variable thicknesses. The decrease in surface recombination velocity of GaAs samples as a function of the thickness was measured until a critical thickness is reached.

L4 ANSWER 29 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:225067 CAPLUS
DOCUMENT NUMBER: 124:302357
TITLE: Optical near-field imaging by force detection
AUTHOR(S): Hipp, M.; Mertz, J.; Mlynek, J.; Marti, O.
CORPORATE SOURCE: Universitat Konstanz, Konstanz, D-78434, Germany
SOURCE: NATO ASI Series, Series E: Applied Sciences (1995), 300(Photons and Local Probes), 109-22
CODEN: NAESDI; ISSN: 0168-132X
PUBLISHER: Kluwer
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A scanning force microscope (SFM) is used to **detect** near field light by a mechanism based on optical modulation of the image force between a **semiconducting** probe tip and a glass surface. The modulation stems from a phenomenon called surface **photo-voltage** (SPV). The performance of the mechanism for near-field microscopy is demonstrated by imaging a standing evanescent light wave and profiling structured samples. A simple theor. model is described which yields a good agreement with exptl. results. As a first application of this technique imaging results on light induced space charge gratings in photorefractive materials are presented.

L4 ANSWER 30 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:991197 CAPLUS
DOCUMENT NUMBER: 124:103119
TITLE: Contactless characterization of **semiconductors** using laser-induced surface **photo-charge voltage measurements**

AUTHOR(S): Abbate, A.; Rencibia, R.; Ivanov, O.; Masini, G.;
Palma, F.
CORPORATE SOURCE: Developmental and Engineering Cent., Army Armament
Res., Watervliet, NY, USA
SOURCE: Report (1995), ARCCB-TR-95004; Order No. AD-A293618,
16 pp. Avail.: NTIS
From: Gov. Rep. Announce. Index (U. S.) 1995, 95(22),
Abstr. No. 22-01,244
DOCUMENT TYPE: Report
LANGUAGE: English

AB A new technique to evaluate the elec. properties of **semiconductor** wafers and devices using surface **photo-charge voltage** (SPCV) **measurements** is presented. SPCV **measures** the change in the surface elec. charge induced by a chopped laser light whose photon energy exceeds the band gap energy of the **semiconductor** sample. This charge is measured capacitatively; thus, SPCV measurements do not require the fabrication of metal contacts. In photocharge voltage spectroscopy measurements, the SPCV is measured as a function of the energy of a subband gap monochromatic steady-state illumination, and its derivative spectrum is associated with the d. of surface states. A qual. anal. of the proposed measurement is presented along with exptl. results performed on gallium arsenide samples passivated with a thin zinc selenide film of variable thickness. The proposed technique is completely contactless, and it can be used as an in-line nondestructive characterization of semiconductor wafers during the various stages of integrated-circuits fabrication.

L4 ANSWER 31 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:918473 CAPLUS
DOCUMENT NUMBER: 124:19200
TITLE: Surface photovoltage monitoring of silicon surface
native and chemical oxides following wafer cleaning
and rinsing operations

AUTHOR(S): Rosato, John J.; Hall, R. Mark; Parry, Thad B.;
Lindquist, Paul G.; Jarvis, Taura D.
CORPORATE SOURCE: Santa Clara Plastics, Boise, ID, 83704, USA
SOURCE: Materials Research Society Symposium Proceedings
(1995), 386(Ultraclean Semiconductor Processing
Technology and Surface Chemical Cleaning and
Passivation), 47-54
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors report on the use of the Surface **Photo Voltage** (SPV) technique to monitor the Si surface bonding arrangement, and the impurity metallic contamination level prior to critical diffusion processes via the indirect measurement of surface charge and diffusion length, resp. The effectiveness of the pre-diffusion wet chemical cleaning and rinsing sequences can be accurately monitored via the real-time, nondestructive SPV measurement. In particular the nature of the surface passivation/chemical oxide formed during the cleaning and rinsing operations can be monitored by quant. surface charge measurements. The importance of the prior wafer history is highlighted, as is the role of the Si starting material and measurement parameters.

L4 ANSWER 32 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:649281 CAPLUS
DOCUMENT NUMBER: 123:272143
TITLE: Contactless characterization of **semiconductors**
using laser-induced surface **photo-charge voltage measurements**

AUTHOR(S): Abbate, A.; Rencibia, P.; Ivanov, O.; Masini, G.;
Palma, F.; Das, P.

CORPORATE SOURCE: Benet Labs, Watervliet, NY, 12189-4050, USA
SOURCE: Materials Science Forum (1995), 173-174, 221-6
CODEN: MSFOEP; ISSN: 0255-5476

DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new technique for evaluating the elec. properties of **semiconductor** wafers and devices using Surface **Photo**-Charge **Voltage** (SPCV) **measurements** is here presented. SPCV **measures** the change in the surface elec. charge induced by a chopped laser light whose photon energy exceeds the bandgap energy of the **semiconductor** sample. In **Photo**-Charge **Voltage** Spectroscopy measurements the SPCV is measured as a function of the energy of a sub-bandgap monochromatic steady-state illumination, and its derivative spectrum is associated with the d. of surface states. A qual. anal. of the proposed measurement is here presented along with exptl. results performed on GaAs samples passivated with a thin ZnSe film of variable thickness. The proposed technique is completely contactless and it can be used as an in-line nondestructive characterization of semiconductor wafers during the various stages of integrated circuits fabrication.

L4 ANSWER 33 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:90537 CAPLUS
DOCUMENT NUMBER: 118:90537
TITLE: Light-output restriction devices for optical communication systems and restrction of light-output
INVENTOR(S): Koizumi, Yoshihiro
PATENT ASSIGNEE(S): NEC Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 04178614	A2	19920625	JP 1990-307642	19901114
JP 2940146	B2	19990825		

PRIORITY APPLN. INFO.: JP 1990-307642 19901114

AB The device consists of **semiconductor** layers in which a photo-absorption layer is sandwiched by a p- and an n-layer having forbidden bands larger than that of the photo-absorption layer, a **semiconductor** photo-absorption device which applies a **voltage** to the photo-absorption layer, a **detector** for photo-current from the photo-absorption device corresponding to intensity of incident light, a voltage comparator, and a sequential multiplier which restricts the voltage to be applied to the photo-absorption layer based on signals from the comparator. The **semiconductor** photo-absorption device may be formed on a **semiconductor** substrate on which a **semiconductor** laser or a **semiconductor** optical **detector** is formed. Photo-absorption is changed according to the incidence into the photo-absorption device and light-output from the photo-absorption device is kept below a desired level.

L4 ANSWER 34 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:120947 CAPLUS
DOCUMENT NUMBER: 108:120947
TITLE: Automated measurements of characteristics for electrodeposited cadmium selenide based photoelectrodes
AUTHOR(S): Krasnov, Yu. S.; Vas'ko, A. T.; Tsikovkin, E. M.
CORPORATE SOURCE: Inst. Obshch. Neorg. Khim., Kiev, USSR
SOURCE: Ukrainskii Khimicheskii Zhurnal (Russian Edition)

(1987), 53(10), 1053-8
CODEN: UKZHAU; ISSN: 0041-6045

DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The automation of **measuring** of the **semiconductor** material properties with the use of the microcomputer is proposed. The CdSe films were prepared from the acidic solution containing Cd(II) and Se(IV). The photoelec. measurements were carried out in solution containing Na₂S, S and KOH. The effect of annealing of CdSe film at 400° in air was examined

L4 ANSWER 35 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:625370 CAPLUS

DOCUMENT NUMBER: 103:225370

TITLE: Comparison of high-field stress effects in metal-oxide-**semiconductor** structures with aluminum and polycrystalline silicon gates using internal photoemission **measurements**

AUTHOR(S): Heyns, M. M.; De Keersmaecker, R. F.

CORPORATE SOURCE: ESAT Lab., Kathol. Univ. Leuven, Heverlee, B-3030, Belg.

SOURCE: Journal of Applied Physics (1985), 58(10), 3936-9
CODEN: JAPIAU; ISSN: 0021-8979

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of high-field stressing (9-10 MV/cm) with pos. gate voltage on charges and defects in the SiO₂ layer of MOS structures are reported. In Al-gate devices neg. charge builds up near the Si-SiO₂ interface whereas pos. charge is generated near the Al-SiO₂ interface. Subsequent avalanche injection of electrons into the oxide does not annihilate the pos. charge, but the neg. charge disappears. Similar studies were performed on polycryst. Si gate devices for which internal photoemission (**photo current-voltage**) measurements are reported for the first time. In this case a neg. charge distribution was observed near both SiO₂ interfaces after a pos. stress and addnl. electron traps were created near the noninjecting polycryst. silicon/SiO₂ interface. Similarly, a neg. stress for a polycryst. Si gate device creates electron traps near the substrate Si-SiO₂ interface, as reported previously for Al-gate devices.

L4 ANSWER 36 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:184256 CAPLUS

DOCUMENT NUMBER: 94:184256

TITLE: Effect of bias voltage on the anisotropy of the photoresponse of n-p-zinc germanium phosphide (n-p-ZnGeP₂) homodiodes

AUTHOR(S): Rud, Yu. V.; Masagutova, R. V.

CORPORATE SOURCE: Fiz.-Tekh. Inst. im. Ioffe, Leningrad, USSR

SOURCE: Fizika i Tekhnika Poluprovodnikov (Sankt-Peterburg) (1981), 15(3), 439-47

CODEN: FTPPA4; ISSN: 0015-3222

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The photoelec. properties of n-p-ZnGeP₂ diode structures were investigated as a function of bias voltage in natural and linearly polarized light. In the photoresponse of direct-biased structures, a sign inversion of the photocurrent was observed, during which the characteristic energy .plcnst.ω_i depends on the polarization of the incident radiation. In structures with a polarization-controlled sign of the photocurrent, the coefficient of photopleochroism sharply decreases at some characteristic value of .plcnst.ω_∞, which is the basis for the reaction on anisotropic **semiconductors** of highly **sensitive** narrow-band photoanalyzers with an elec.-field-readjustable spectral range.

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NEWS	9	JAN 13	IPC 8 searching in IFIPAT, IFIUIDB, and IFICDB
NEWS	10	JAN 13	New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to INPADOC
NEWS	11	JAN 17	Pre-1988 INPI data added to MARPAT
NEWS	12	JAN 17	IPC 8 in the WPI family of databases including WPIFV
NEWS	13	JAN 30	Saved answer limit increased
NEWS	14	JAN 31	Monthly current-awareness alert (SDI) frequency added to TULSA
NEWS	15	FEB 21	STN AnaVist, Version 1.1, lets you share your STN AnaVist visualization results
NEWS	16	FEB 22	Status of current WO (PCT) information on STN
NEWS	17	FEB 22	The IPC thesaurus added to additional patent databases on STN
NEWS	18	FEB 22	Updates in EPFULL; IPC 8 enhancements added
NEWS EXPRESS			FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005. V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT http://download.cas.org/express/v8.0-Discover/
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1303335 SENS?
1543166 DETECT?
2835637 MEASUR?
371695 MONITOR?
28579 ANALYTE
22780 ANALYTES
44368 ANALYTE
(ANALYTE OR ANALYTES)
49821 MOLECULE
151501 MOLECULES
194443 MOLECULE
(MOLECULE OR MOLECULES)
2321053 MOL
623784 MOLS
2660021 MOL
(MOL OR MOLS)
2698174 MOLECULE
(MOLECULE OR MOL)
99634 COMPOUND
822544 COMPOUNDS
909599 COMPOUND
(COMPOUND OR COMPOUNDS)
1087057 COMPD
1664050 COMPDS
2363417 COMPD
(COMPD OR COMPDS)
2761208 COMPOUND
(COMPOUND OR COMPD)
307254 TARGET
120576 TARGETS
381130 TARGET
(TARGET OR TARGETS)

259155 SUBSTANCE
 647349 SUBSTANCES
 839216 SUBSTANCE
 (SUBSTANCE OR SUBSTANCES)
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 1303335 SENS?
 1543166 DETECT?
 2835637 MEASUR?
 371695 MONITOR?
 28579 ANALYTE
 22780 ANALYTES
 44368 ANALYTE
 (ANALYTE OR ANALYTES)
 49821 MOLECULE
 151501 MOLECULES
 194443 MOLECULE
 (MOLECULE OR MOLECULES)
 2321053 MOL
 623784 MOLS
 2660021 MOL
 (MOL OR MOLS)
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 (MOLECULE OR MOL)
 99634 COMPOUND
 822544 COMPOUNDS
 909599 COMPOUND
 (COMPOUND OR COMPOUNDS)
 1087057 COMPD
 1664050 COMPDS
 2363417 COMPD
 (COMPD OR COMPDS)
 2761208 COMPOUND
 (COMPOUND OR COMPD)
 307254 TARGET
 120576 TARGETS
 381130 TARGET
 (TARGET OR TARGETS)
 259155 SUBSTANCE
 647349 SUBSTANCES
 839216 SUBSTANCE
 (SUBSTANCE OR SUBSTANCES)
 L2 413654 (SENS? OR DETECT? OR MEASUR? OR MONITOR?) (S) (ANALYTE OR MOLECULE OR COMPOUND OR TARGET OR SUBSTANCE)

 => s photo (8w) (respons? or sensitiv?)
 106862 PHOTO
 1243 PHOTOS
 108060 PHOTO
 (PHOTO OR PHOTOS)
 1950505 RESPON?
 956818 SENSITIV?
 L3 3052 PHOTO (8W) (RESPON? OR SENSITIV?)

 => s l2 and l3
 L4 416 L2 AND L3

 => s l4 and semiconduct?
 565124 SEMICONDUCT?
 2540 SEMICOND
 19 SEMICONDS

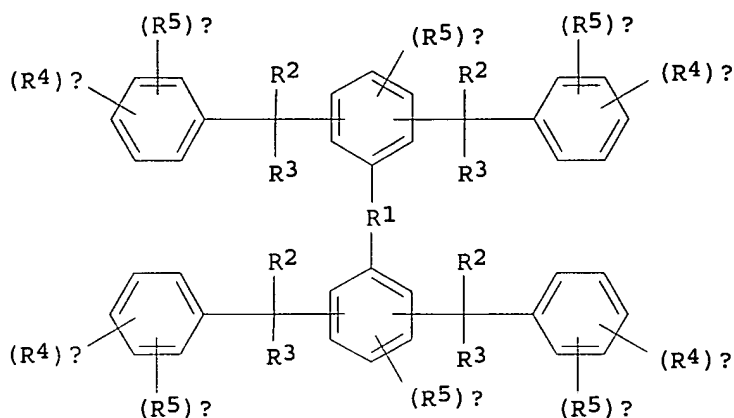
2553 SEMICOND
(SEMICOND OR SEMICONDS)
565811 SEMICONDUCT?
(SEMICONDUCT? OR SEMICOND)
L5 35 L4 AND SEMICONDUCT?

=> s l5 and surface (s) photo (8w) voltage
2191035 SURFACE
417109 SURFACES
2361497 SURFACE
(SURFACE OR SURFACES)
106862 PHOTO
1243 PHOTOS
108060 PHOTO
(PHOTO OR PHOTOS)
305795 VOLTAGE
30689 VOLTAGES
320395 VOLTAGE
(VOLTAGE OR VOLTAGES)
78 SURFACE (S) PHOTO (8W) VOLTAGE
L6 0 L5 AND SURFACE (S) PHOTO (8W) VOLTAGE

=> display l5 1-35 ibib abs

L5 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:340530 CAPLUS
DOCUMENT NUMBER: 142:420034
TITLE: Naphthoquinonediazidesulfonate in positive-working
photo-sensitive resin composition
for **semiconductor** device fabrication in
optical imaging devices
INVENTOR(S): Ikeda, Hiroshi; Banba, Toshio; Hirano, Takashi
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 48 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2005104977	A2	20050421	JP 2004-264228	20040910
PRIORITY APPLN. INFO.:			JP 2003-320626	A 20030912
OTHER SOURCE(S):	MARPAT	142:420034		
GI				



AB The title ester is 1,2-naphthoquinone-2-diazide-5-sulfonate or 1,2-naphthoquinone-2-diazide-4-sulfonate ester of compound I (R1 = alkylene, carbonyl, carbonyl ether, etc.; R2-4 = H, C1-8 alkyl, alkoxy, etc.; R5 = OH, H, C1-8 alkyl, etc.; α, β = integer 0-5; γ = integer 0-3; $0 \leq \alpha + \beta \leq 5$; $\beta + \gamma \neq 0$). The composition is suitable for fabricating of patterned protecting layers and patterned insulative layers in **semiconductor** devices without thinned nor leaving scam during the manufacture with good pattern profile.

L5 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:964678 CAPLUS

DOCUMENT NUMBER: 141:417965

TITLE: Sensitizing dye and photosensitive composition for lithographic printing plate

INVENTOR(S): Shibuya, Akinori

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 32 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004224257	A1	20041111	US 2004-838316	20040505
JP 2004331880	A2	20041125	JP 2003-131847	20030509
EP 1491536	A1	20041229	EP 2004-10971	20040507

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR

PRIORITY APPLN. INFO.: JP 2003-131847 A 20030509

OTHER SOURCE(S): MARPAT 141:417965

AB A **photo-sensitive** composition for lithog. printing plate comprises (i) the novel **compd.** as a **sensitizing** dye, (ii) an activator **compd.** generating at least one of a radical and an acid by interacting the activator **compd.** with light absorption of the **sensitizing** dye to cause chemical change, and (iii) a **compd.** changing its phys. or chemical property irreversibly by a reaction with at least one of the radical and the acid. The object of the present invention is to provide a photosensitive composition having high sensitivity to the wavelength over a wide range 350-450 nm, high press life and good compatibility and being suited for a lithog. printing plate precursor to the oscillation wavelength of a short-wave **semiconductor** laser and thereby obtain a lithog. printing plate or

the like for scanning exposure, which is ensured with excellent workability, high profitability and good suitability for CTP system.

L5 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:698040 CAPLUS

DOCUMENT NUMBER: 137:390553

TITLE: Optoelectronic properties of thin film organic/inorganic hybrid devices

AUTHOR(S): Schroeder, Raoul; Ullrich, Bruno

CORPORATE SOURCE: Center for Materials Science, Department of Physics & Astronomy, Bowling Green State University, Bowling Green, OH, 43403-0224, USA

SOURCE: Trends in Optics and Photonics (2002), 64 (Organic Thin Films for Photonic Applications), 115-121
CODEN: TOPRBS

PUBLISHER: Optical Society of America

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thin film hybrid structures based on organic conjugated polymers and II-VI inorg. **semiconductors** were fabricated using spin-coating, evaporation and pulsed-laser deposition. These structures provide many advantages for optoelectronic applications, such as combining the high charge carrier mobilities in inorg. polycryst. thin films and high **photo-sensitivity**, intense photoluminescence, and ease of deposition of conjugated **mols.** The optoelectronic properties of a promising hetero-pairing, a Cd sulfide and a diisoquinoline perylene derivative device, were studied. The device is very suitable for photovoltaic applications, but exhibits a varying concentration of interface defects depending on the formation process.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:617203 CAPLUS

DOCUMENT NUMBER: 135:186775

TITLE: Nuclear power plant and its operational method

INVENTOR(S): Yotsuyanagi, Tadashi; Takagi, Junichi; Yamazaki, Kenji; Osato, Tetsuo; Ichikawa, Nagayoshi

PATENT ASSIGNEE(S): Toshiba Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001228289	A2	20010824	JP 2000-37130	20000215
PRIORITY APPLN. INFO.:			JP 2000-37130	20000215

AB The invention relates to an operational method of a nuclear power plant, especially relates to the corrosion prevention of nuclear reactor structural materials, wherein the **photo-sensitive semiconductor**, such as TiO₂, PbO, Bi₂O₃, etc., and the assisting agent, e.g., **compds.** containing elements selected from Pt, Rh, Pd, etc., are attached on the surface of the structural material in the reactor for relaxing the corrosive environments.

L5 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:802936 CAPLUS

DOCUMENT NUMBER: 132:50663

TITLE: Polyamide compositions for positive-working photoresists with good edge rinse property

INVENTOR(S): Kenmochi, Tomonori; Banba, Toshio; Hirano, Takashi

PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11349810	A2	19991221	JP 1998-159535	19980608
JP 3682898	B2	20050817		

PRIORITY APPLN. INFO.: JP 1998-159535 19980608

AB The compns. comprise polyamides 100, **photo-sensitive** diazoquinone **compds.** 1-100 and F-containing surfactants 0.001-10 parts, where the polyamides bear units derived from dihydroxylated cyclic diamines, units derived from cyclic dicarboxylic acids, and optionally units derived from siloxanediamine **compds.**, and have terminal groups derived from aliphatic or alicyclic dicarboxylic anhydrides containing alkenyl or alkynyl groups. Thus, heating a solution of a 2:1 (mol/mol) 1-hydroxy-1,2,3-benzotriazole derivative of di-Ph ether-4,4'-dicarboxylic acid, 2, and hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane 363.3 in N-methyl-2-pyrrolidone 3000 at 75° for 12 h, adding 5-norbornene-2,5-dicarboxylic anhydride 32.8, mixing for 12 h, filtering, adding into a 3/1 water/MeOH mixture and washing the resulting precipitate gave a polyamide (I). Dissolving the I 100 with a diazoquinone 25 and 68% FC 170C (F-containing surfactant) 0.03 in N-methyl-2-pyrrolidone 200 parts, mixing and filtering gave a **photo-sensitive** resin with good edge rinse property.

L5 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:608 CAPLUS
 DOCUMENT NUMBER: 130:73699
 TITLE: From deep colored 2-aryllindan-1,3-diones - organic **semiconductors** to photoconductors, non-linear optical materials and synthetic metals
 AUTHOR(S): Neilands, O.
 CORPORATE SOURCE: Riga Technical Univ., Riga, LV-1048, Latvia
 SOURCE: Latvian Journal of Physics and Technical Sciences (1998), (4), 28-38
 CODEN: LJPSED; ISSN: 0868-8257
 PUBLISHER: Latvian Journal of Physics and Technical Sciences
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English

AB Deep colored 2-aryllindan-1,3-diones and 2-aryl-3-aminoinden-1-ones crystals due to strong polyassocn. by intermol. hydrogen bonds and partially due to p-donor-acceptor interaction are organic **semiconductors**, and this class of compds. has become a starting point for research into the charge carrier transitions in organic mol. crystals. 2-(4'-Dimethylaminophenyl)indan-1,3-diones are strong electron donors and at oxidation they form stable free radicals suitable for designing synthetic metals. In the search for organic photoconductors there was created a novel class of **photo-sensitive mol** . crystals N-(indan-1,3-dion-2-yl)pyridinium betaines, which in LB-films proved to show non-linear optical properties. Quantum chemical calcn. confirmed the pyridinium betaines holding much promise for non-linear optical materials. Synthesis of naphthacene derivs. as well as pentacene has given materials feasible for investigation of charge carrier generation mechanism. Attempt of synthetisizing tetrathiafulvalenes (TTF) has led to creation of amphiphilic TTF for conducting LB films and pyrimido-TTF capable of forming intermol. hydrogen bonds and highly conducting organic solids.

REFERENCE COUNT: 100 THERE ARE 100 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L5 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:782002 CAPLUS
DOCUMENT NUMBER: 130:73842
TITLE: **Photo- and heat-sensitive**
recording material and image-formation using same
INVENTOR(S): Washisu, Shintaro; Fukushige, Yuichi; Usami, Tomomasa
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 44 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10319585	A2	19981204	JP 1997-132584	19970522
PRIORITY APPLN. INFO.:			JP 1997-132584	19970522
OTHER SOURCE(S):	MARPAT 130:73842			

AB The title material, used in an image-forming process in which it is
imagewise irradiated with a secondary higher harmonics obtained from a
laser beam by using a nonlinear optical device and also is uniformly
heated at a temperature higher than the coloring temperature of the material
to form

an image thereon, comprises a support with a coating of a recording layer
possessing electron-donating colorless dye-containing heat-responsible
microcapsules, a radical-generating agent, and either a compound having
electron-accepting and polymerizing vinyl monomer portions in its mol. or an
electron-accepting color developer and a polymerizing vinyl monomer. An
image-recording method comprising the above process is also claimed. The
material provides clear, high contrast images by using long wavelength
irradiation lasers such as **semiconductor** lasers without spectrally
sensitizing the material.

L5 ANSWER 8 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:750639 CAPLUS
DOCUMENT NUMBER: 130:73581
TITLE: Growth, patterning and microelectronic applications of
epitaxial cobalt disilicide
AUTHOR(S): Manti, S.; Kappius, L.; Antons, A.; Loken, M.;
Klinkhammer, F.; Dolle, M.; Zhao, Q. T.; Mesters, S.;
Buchal, Ch.; Bay, H. L.; Kabius, B.; Trinkaus, H.;
Heinig, K. H.
CORPORATE SOURCE: Institut fuer Schicht- und Ionentechnik,
Forschungszentrum Juelich GmbH, Juelich, D-52425,
Germany
SOURCE: Materials Research Society Symposium Proceedings
(1998), 514(Advanced Interconnects and Contact
Materials and Processes for Future Integrated
Circuits), 145-155
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report on the epitaxial growth of CoSi₂ on Si using ion beam
synthesis and mol. beam allotaxy. The latter process uses MBE to grow a
silicide precipitate distribution embedded in single crystalline Si and thermal
annealing to form the epitaxial layer. Both, ion beam synthesis and mol.
beam allotaxy, are capable to grow epitaxial buried and surface CoSi₂
layers on Si(100) and Si(111) of high quality. Nanometer patterning
becomes possible by local oxidation of thin (20 nm) epitaxial CoSi₂ surface

layers. The authors use a patterned nitride as a diffusion barrier for the oxidant. The oxidized regions sep. from the protected areas during oxidation. Very narrow gaps ≥ 50 nm can be obtained between the silicide layers by rapid thermal oxidation. The generated gaps (lines) in the silicide layer follow in a self-adjusted manner the contours of the oxidation mask. A Monte Carlo code was developed to simulate the patterning process. The stress at the edge of the oxidation mask modifies the diffusion processes during the oxidation, such that a separation of the layers occurs.

The

separation is highly uniform. As an application of epitaxial buried layers the authors present an ultrafast MSM (metal-**semiconductor**-metal) photodetector. The device was manufactured on an epitaxial CoSi_2 ground plane on Si. The single crystalline Si on top of the silicide acts as the photosensitive layer. The MSM photodiodes show a **photo response** as short as 3.5 ps FWHM on Si(111) and 6.7 ps (FWHM) on Si(100), resp.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:93307 CAPLUS

DOCUMENT NUMBER: 124:162074

TITLE: Electrical properties of PZT thin films derived from sol-gel solution containing **photo-sensitive** water-generator

AUTHOR(S): Nakao, Yuichi; Nakamura, Takashi; Kamisawa, Akira; Takasu, Hidemi; Soyama, Nobuyuki; Sasaki, Go; Atsuki, Tsutomu; Yonezawa, Tadashi; Ogi, Katsumi

CORPORATE SOURCE: Rohm Co., Ltd., Kyoto, 615, Japan

SOURCE: ISAF '94, Proceedings of the IEEE International Symposium on Applications of Ferroelectrics, 9th, University Park, Pa., Aug. 7-10, 1994 (1994), 450-3. Editor(s): Pandey, R. K.; Liu, Michael; Safari, Ahmad. Institute of Electrical and Electronics Engineers: New York, N. Y.

CODEN: 62GYAM

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The **photo sensitivity** of sol-gel solution of $\text{PbZr}_{x}\text{Ti}_{1-x}\text{O}_3$ (PZT) was confirmed. A coated film of the sol-gel solution on Si and Ir/IrO₂/SiO₂/Si substrates was exposed to an excimer laser and developed with 2-methoxyethanol diluted with iso-Pr alc. More than 900 mJ/cm² of exposure was required to obtain the micro patterns. The film was finally annealed at 700° for 60 s by rapid thermal annealing (RTA). From this process, half-micron patterns of PZT films were obtained. The 200-nm-thick film showed Pr of 16.6 $\mu\text{C}/\text{cm}^2$ and Ec of 38.8 kV/cm. After $1 + 10^{12}$ cycles of switching pulses, the films showed no degradation of remanent polarization. Studying for 1-transistor-type ferroelec. memory, metal-ferroelec.-metalinsulator-**semiconductor** (MFMIS) structure was prepared with this process.

L5 ANSWER 10 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:926365 CAPLUS

DOCUMENT NUMBER: 123:327743

TITLE: Lead-frame forming material

INVENTOR(S): Naruse, Yasuhito; Kamitani, Kiyoshi; Uesugi, Akio; Kakei, Tsutomu; Morohishi, Gouichi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 672951	A2	19950920	EP 1995-103602	19950313
EP 672951	A3	19951213		
R: DE, NL				
JP 07248617	A2	19950926	JP 1994-42672	19940314
JP 3262448	B2	20020304		
US 5641577	A	19970624	US 1995-403483	19950314

PRIORITY APPLN. INFO.: JP 1994-42672 A 19940314

AB Disclosed are (i) a lead-frame forming material which contains a light-sensitive material comprising (1) a diazo salt light-sensitive resin and (2) a water-insol. but alkaline water-soluble lipophilic high mol. weight compd., (ii) a lead-frame forming material which contains a light-sensitive material comprising a photo-dimeric light-sensitive composition, and (iii) a lead-frame forming material which contains a light-sensitive material comprising (1) a water-soluble but alkaline water-soluble resin, (2) a compd. capable of generating an acid by irradiation with active rays of radiant rays, and (3) a compd. containing at least one crosslinkable group by the action of the acid.

L5 ANSWER 11 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:698823 CAPLUS
DOCUMENT NUMBER: 123:99987
TITLE: Manufacture of contact windows in flat insulating films of semiconductor chips
INVENTOR(S): Shindo, Junji
PATENT ASSIGNEE(S): Fujitsu Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07037891	A2	19950207	JP 1993-181760	19930723

PRIORITY APPLN. INFO.: JP 1993-181760 19930723

AB In manufacture of the contact windows in the insulating films on the substrates of the semiconductor chips, the insulating films contain insulators of silicon compds. grown on the substrate and photo-sensitive polyimide films spread on the insulating films, and the contact windows are manufactured by patterning the photo-sensitive polyimide films and etching the insulating films using the patterned polyimide films as masks. The contact windows in flat insulating films are manufactured with simple processes.

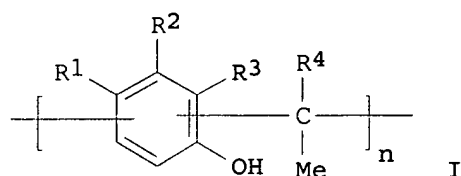
L5 ANSWER 12 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:420243 CAPLUS
DOCUMENT NUMBER: 122:176435
TITLE: Semiconductor device manufacture and resist compounds for use in it
INVENTOR(S): Kishimura, Shinji
PATENT ASSIGNEE(S): Mitsubishi Denki K.K., Japan
SOURCE: Ger. Offen., 42 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 4341302	A1	19940630	DE 1993-4341302	19931203
JP 06204162	A2	19940722	JP 1992-348601	19921228
KR 9708270	B1	19970522	KR 1993-30054	19931227
US 5591654	A	19970107	US 1994-322131	19941013
PRIORITY APPLN. INFO.:			JP 1992-348601	A 19921228
			US 1993-128287	A3 19930929

GI



AB To form a buried impurity layer in a **semiconductor** substrate, a resist film $\geq 3 \mu\text{m}$ thick is formed on the substrate and selectively illuminated to form a pattern. After illumination and before development, the resist film is fired at $110-130^\circ$. The resist film is developed and rinsed to form a resist pattern, which is fired at $100-130^\circ$. Using the resist pattern as a mask, high-energy impurity ions are implanted in the substrate to form a buried impurity layer, and the resist pattern is removed. The resist film comprises a phenolic resin containing $\geq 40 \text{ mol}\%$ m-cresol units and having weight-average mol. weight $\geq 10,000$, and a light- **sensitive** agent comprising structural units I ($R1-3 = \text{OH}, \text{Me}, \text{or H}$; $R4 = \text{Me or H}$), the OH groups of which are partially or completely esterified with 1,2-naphthoquinonediazide-4-sulfonic acid or 1,2-naphthoquinonediazide-5-sulfonic acid.

L5 ANSWER 13 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:496018 CAPLUS

DOCUMENT NUMBER: 121:96018

TITLE: Manufacture of polyimide type photoresist resin composition

INVENTOR(S): Banba, Toshio; Sashita, Nobuyuki; Yamamoto, Mitsuhiro; Takeda, Naoji

PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

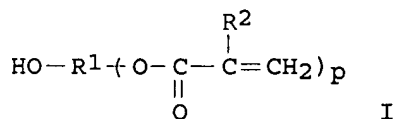
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05170901	A2	19930709	JP 1991-317637	19911202
JP 2550249	B2	19961106		
PRIORITY APPLN. INFO.:			JP 1991-317637	19911202

GI



AB The title photoresist composition is manufactured by reaction of (1) a dicarboxylic acid (100 mol%) obtained from a tetracarboxylic dianhydride and an alc. I [R1 = bi- to hexa-valent organic group; R2 = H, Me; p = 1-5], and (2) a diaminosiloxane H2NR3SiR5R6OSiR5R6R4NH2 (0.5-50 mol%) [R3,4 = bivalent C1-5 aliphatic or C≥6 aromatic group; R5,6 = monovalent aliphatic or aromatic group; n = 1-100] and an aromatic diamine (50-99.5 mol%) by using a carbodiimide condensing agent, and during the above reaction the diamines and the carbodiimide condensing agent are stepwise added with the addition of diaminosiloxane is finished one step before the rest of the addition process is completed. This composition shows a high sensitivity and good layer adhesion.

L5 ANSWER 14 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:422547 CAPLUS
DOCUMENT NUMBER: 121:22547
TITLE: Positively working radiation-sensitive novolak-based resin composition
INVENTOR(S): Kajita, Tooru; Oota, Toshuki; Isamoto, Yoshitsugu; Miura, Takao
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 05313367	A2	19931126	JP 1992-146871	19920513
PRIORITY APPLN. INFO.:			JP 1992-146871	19920513

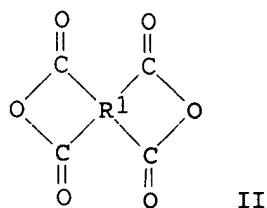
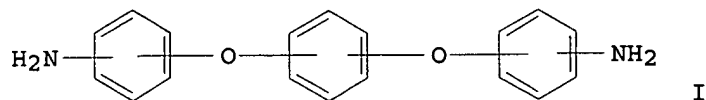
GI For diagram(s):, see printed CA Issue.

AB The title composition contain (a) an alkali-soluble novolak prepared from aldehydes, m-cresol, and ≥1 phenols selected from p-cresol, o-cresol, 2,3-xyleneol, 2,5-xyleneol, 3,4-xyleneol, 3,5-xyleneol, and 2,3,5-trimethylphenol, except copolymers of aldehydes and cresol isomers, (b) 1,2-quinondiazides, (c) polymers of polystyrene-conversion weight average mol. weight ≥800 comprising aromatic repeating structure units I and/or II (R1-2 = H, alkyl, aryl, halo, NO2, alkoxy, OH; R3-7 = H, alkyl, alkenyl, aryl; R8-10 = H, alkyl, aryl; 1 ≤10). The composition for UV-, electron beam-, mol. beam-, or synchrotron radiation proton beam-sensitive resist is useful for manufacture of integrated circuit.

L5 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:148945 CAPLUS
DOCUMENT NUMBER: 120:148945
TITLE: Polyimide photoresist resin composition
INVENTOR(S): Hirano, Takashi; Sashita, Nobuyuki
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 05040337	A2	19930219	JP 1991-196284	19910806
JP 2986970	B2	19991206		
PRIORITY APPLN. INFO.:			JP 1991-196284	19910806

GI



AB The title photoresist composition comprises (1) a solution of a polyamic acid
in an amide **compd.** as a solvent, which is obtained by reacting an aromatic diamine (I) with a tetracarboxylic dianhydride II (R1 = aliphatic or aromatic group) in the above amide containing a C=C bond polarizable with an actinic ray, (2) an amino-containing acrylate **compd.** CH₂=CXCO₂(CH₂)₂NY₂ (X = H, Me; Y = Me, Et), and (3) a **sensitizer** with maximum **sensitization** wavelength λ_{max} 330-500 nm. This composition shows high sensitivity and good layer adhesion.

L5 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:202087 CAPLUS

DOCUMENT NUMBER: 118:202087

TITLE: Positive-working photoresist composition

INVENTOR(S): Ota, Toshiyuki; Inomata, Katsumi; Isamoto, Yoshitsugu; Miura, Takao

PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

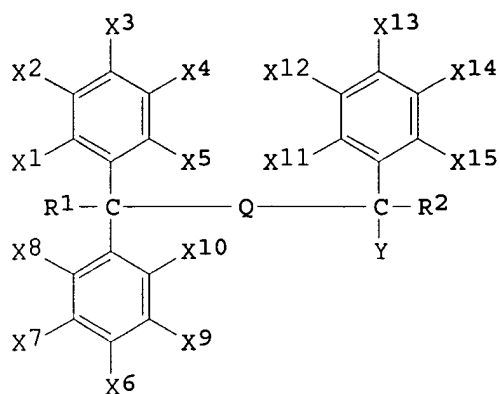
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 04274242	A2	19920930	JP 1991-58395	19910228
JP 3209754	B2	20010917		
PRIORITY APPLN. INFO.:			JP 1991-58395 .	19910228

GI

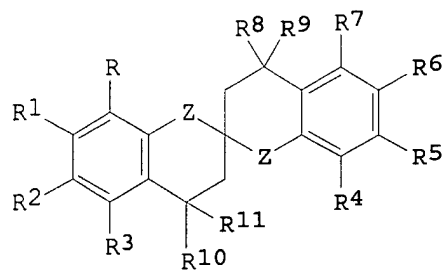


I

AB The title composition containing an alkali-soluble resin contains I [Q = (CR₃R₄)_a, phenylene; a = 0-4; X1-15 = H, alkyl, alkoxy, OH; R1-4 = H, alkyl; Y = H, alkyl, Ph] and a 1,2-quinonediazido **compd.** as a radiation-sensitive component. The photoresist composition shows high sensitivity and good developability.

L5 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1991:546638 CAPLUS
 DOCUMENT NUMBER: 115:146638
 TITLE: Photoionization-sensitive resin composition
 INVENTOR(S): Sakaguchi, Shinji; Tan, Shiro
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02248954	A2	19901004	JP 1989-70163	19890322
JP 2589803	B2	19970312		
PRIORITY APPLN. INFO.:			JP 1989-70163	19890322
OTHER SOURCE(S):	MARPAT 115:146638			
GI				



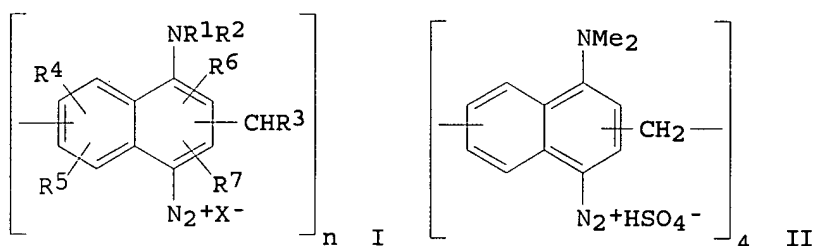
I

AB The title resin composition containing a photoionization-sensitive **compd.** and an alkali soluble resin contains ≥ 1 **compd.** represented by I (R, R1-7 = H, OH, halo, alkyl, alkoxy, alalkyl, aryl,

amino, monoalkylamino, dialkylamino, alkylcarbamoyl, arylcarbamoyl, alkylsulfamoyl, arylsulfamoyl, carboxy, cyano, nitro, acyl, alkylloxycarbonyl, aryloxycarbonyl, acyloxy; R8-11 = H, lower alkyl; Z = O, single bond; and ≥ 1 of R, and R1-7 is OH). This composition useful for manufacture of **semiconductor** device gives $\leq 1\text{-}\mu\text{m}$ space resolution

L5 ANSWER 18 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1991:438684 CAPLUS
 DOCUMENT NUMBER: 115:38684
 TITLE: Negative-working photosensitive compositions
 INVENTOR(S): Sanada, Shinichi
 PATENT ASSIGNEE(S): Toshiba Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03009359	A2	19910117	JP 1989-143826	19890606
PRIORITY APPLN. INFO.: GI			JP 1989-143826	19890606



AB The title compns. contain diazo compds. I (R1-2 = alkyl, aryl, aralkyl; R3 = H, Me, Ph; R4-7 = H, alkyl, aryl, aralkyl, alkoxy, halo, OH, carboxy; X- = anion; n = 2-200). These compns. provide high sensitivity to g-line, high storage stability, and patterns with high mech. strength and transparency, and are useful as masks in fabrication of **semiconductor** devices, color filters, and printing plates. Thus, a tetramer II was obtained by reaction of a diazo compound with HCHO, and it (0.14 g) was dissolved in 140 g of 10% solution of 85:15 (mol) copolymer of hydroxyethyl methacrylate with dimethylaminoethyl acrylate quaternized with MeCl. This solution was applied to a glass wafer and dried to form a 1- μm -thick layer. Exposure to 200 mJ/cm² g-line light and development with water gave a neg. pattern 0.91 μm thick that resolved 2.5 μm , with transmission 96.7, 98.3, and 99.1% at 400, 426, and 500 nm, resp. The pattern was not affected by heating at 180° for 1 h.

L5 ANSWER 19 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1991:133062 CAPLUS
 DOCUMENT NUMBER: 114:133062
 TITLE: Positive-working photoresist material for fabrication of **semiconductor** device
 INVENTOR(S): Tani, Yoshuki; Endo, Masataka; Ogawa, Kazufumi
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 01188852	A2	19890728	JP 1988-12937	19880122

PRIORITY APPLN. INFO.: JP 1988-12937 19880122

AB The title photoresist material contains a photosensitive compound having the R(CH₂)_nCOC(N₂)CO moiety (R = Ph or naphthyl substituted with SO₂Cl, SO₃H, SO₃Me, etc.; n = integer), a resin, and a solvent. The material is useful for patterning by irradiation with a far UV beam and developing with an alkaline solution On a **semiconductor** substrate board, a composition containing R(CH₂)₂COC(N₂)COPr (R = 4-chlorosulfonyl-2-methylphenyl), a novolak resin, and diglyme was applied, irradiated with a KrF excimer laser, and developed in an alkaline solution to give a precise pattern of the submicron order.

L5 ANSWER 20 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:488252 CAPLUS
DOCUMENT NUMBER: 113:88252
TITLE: Photopolymerization initiators and photosensitive materials containing them
INVENTOR(S): Fukui, Tetsuro; Miura, Kyo; Takasu, Yoshio
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 02004804	A2	19900109	JP 1988-155696	19880622

PRIORITY APPLN. INFO.: JP 1988-155696 19880622

OTHER SOURCE(S): MARPAT 113:88252

AB Photosensitive materials comprise radical-polymerizable **compsds.** and photopolymn. initiators containing cationic dye **sensitizers** and borate salts. The initiators show good sensitivity to **semiconductor** laser radiation and are useful for resists, printing plates, and the like. Thus, treating BuMgBr with Ph₂BCl in THF and stirring the resulting solution with aqueous NaOH gave NaBBu₂Ph₂. Then, a solution containing pentaerythritol triacrylate, poly(Me methacrylate), NaBBu₂Ph₂, AcOEt, malachite green, and dichloroethane was applied on an anodically oxidized Al plate and exposed to a He-Ne laser to show high sensitivity.

L5 ANSWER 21 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:407819 CAPLUS
DOCUMENT NUMBER: 113:7819
TITLE: Polyacetylene monomolecular films
INVENTOR(S): Mino, Norihisa
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 02047116 A2 19900216 JP 1988-198213 19880809
 PRIORITY APPLN. INFO.: JP 1988-198213 19880809

AB Polyacetylene monolayer film having high reactivity are prepared from linear **comps.** bearing terminal carboxy group in the main chain, and having 1 branched chain and having ≥ 1 **photo-**, heat-, and/or electron ion-**sensitive** acetylene groups in both main and branched chains. Thus, compound $\text{Me}(\text{CH}_2)_p\text{CH.tplbond.CH}(\text{CH}_2)_q\text{CH}[(\text{CH}_2)_t\text{CH.tplbond.CH}(\text{CH}_2)_s\text{Me}](\text{CH}_2)_r\text{CO}_2\text{H}$ ($p, q, r, s, t = \text{integers}$) was suitable for preparation of monolayer film on a hydrophilic SiO_2 film of **semiconductors**.

L5 ANSWER 22 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:37732 CAPLUS
 DOCUMENT NUMBER: 112:37732
 TITLE: Radiation-sensitive compositions containing polyimides for heat-resistant films
 INVENTOR(S): Yamamori, Yoshuki; Nakao, Toshio; Sashita, Nobuyuki; Toko, Akira
 PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01172454	A2	19890707	JP 1987-329555	19871228
PRIORITY APPLN. INFO.:			JP 1987-329555	19871228

AB Storage-stable title compns., useful for photoresists, interlayer elec. insulators, etc. preventing reduction of films after curing, contain 100 parts mixts. of 100 parts polymers with repeating units $\text{COR}_1(\text{CO}_2\text{H})_n\text{CONHR}_2\text{NH}$ ($\text{R}_1 = \text{trivalent or tetravalent organic group}$; $\text{R}_2 = \text{divalent organic group}$; $n = 1,$

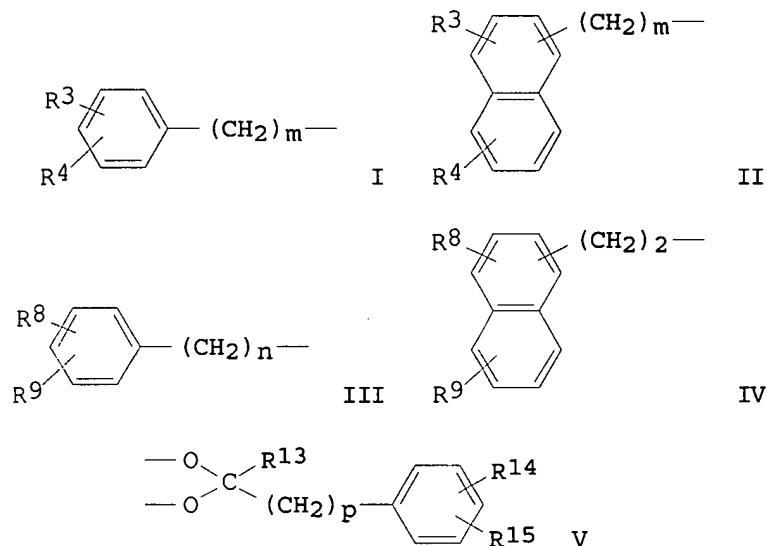
2) and 20-200 parts radiation-polymerizable unsatd. compds. having amino groups or their quaternary salts and 1-100 parts H_2O . Thus, 40.0 g diaminodiphenyl ether and 64.4 g benzophenonetetracarboxylic dianhydride were polymerized at 20° for 5 h in a mixture of 420 g N-methylpyrrolidone and 100 g xylene, then 450 g of the resulting solution was mixed with dimethylaminoethyl methacrylate 50.0, Michler's ketone 3.0, and H_2O 35.0 g to give a transparent solution, which was applied onto a Si wafer, dried, irradiated with UV, developed by a mixture of dimethylacetoamide and MeOH, rinsed by isopropanol, and heated to give a heat-resistant pattern.

L5 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:644349 CAPLUS
 DOCUMENT NUMBER: 111:244349
 TITLE: Photosensitive diazodioxoalkyl **compounds** for UV-**sensitive** photoresists
 INVENTOR(S): Ogawa, Kazufumi; Ohno, Keiji; Endo, Masayuki; Nagoya, Mamoru
 PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
 SOURCE: Eur. Pat. Appl., 85 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 323050	A2	19890705	EP 1988-311462	19881202

EP 323050	A3	19901219		
EP 323050	B1	19941102		
R: DE, FR, GB				
JP 01151573	A2	19890614	JP 1987-310737	19871208
JP 07068238	B4	19950726		
JP 02000865	A2	19900105	JP 1988-305773	19881202
JP 2577980	B2	19970205		
US 5250669	A	19931005	US 1992-873490	19920423
PRIORITY APPLN. INFO.:			JP 1987-306878	A 19871204
			JP 1987-309336	A 19871207
			JP 1987-310737	A 19871208
			JP 1987-306877	A1 19871204
			JP 1987-309335	A1 19871207
			US 1988-277742	B1 19881130
			US 1991-676471	B1 19910327
OTHER SOURCE(S):			MARPAT 111:244349	
GI				



AB The title compds. $R_1COCN_2COR_2$ ($R_1 = I, II$; $R_3, R_4 = H, \text{halogen}, C_1-5 \text{ alkyl}, C_1-5 \text{ alkoxy}, SO_2Cl, SO_2Br, SO_3H, SO_2NR_5R_6, SO_3R_1$; $R_5, R_6 = H, (\text{substituted}) C_1-5 \text{ alkyl}, R_5, R_6, \text{ and } N \text{ together may form a heterocyclic ring; } R_1 = C_1-5 \text{ alkyl}$); the SO_2Cl or SO_2Br group may include a quaternary salt; the SO_3H group may include an ammonium salt, organic base salt, or quaternary salt; $m = 1-20$; $R_2 = \text{alkyl}, \text{cycloalkyl}, \text{hydroxyalkyl}, \text{alkoxyalkyl}, III, IV$; $R_8, R_9 = H, \text{halogen}, C_1-5 \text{ alkyl}, C_1-5 \text{ alkoxy}, SO_2Cl, SO_2Br, SO_3H, SO_3R_{10}, SO_2NR_{11}R_{12}$; $R_{10} = C_1-5 \text{ alkyl}$; $R_{11}, R_{12} = H, (\text{substituted}) C_1-5 \text{ alkyl}, R_{11}, R_{12}, W \text{ together may form a heterocyclic ring; the } SO_2Cl \text{ or } SO_2Br \text{ group may include a quaternary salt; the } SO_3H \text{ group may include an ammonium salt, organic base salt or quaternary salt; } n = 1-20$; $R_1 \text{ and } R_2 \text{ together may form a group of the formula V where } R_{13} = \text{alkyl, aralkyl, hydroxyalkyl, alkoxyalkyl; } R_{14}, R_{15} = H, \text{halogen}, C_1-5 \text{ alkyl}, C_1-5 \text{ alkoxy}, SO_2Cl, SO_2Br, SO_3H, SO_2NR_5R_6, SO_3R_7 \text{ where } R_5, R_6, R_7 \text{ are as defined above; the } SO_2Cl \text{ or } SO_2Br \text{ group may include a quaternary salt; the } SO_3H \text{ group may include an ammonium salt, organic base salt, or quaternary salt; } p = 1-20$) are included in pos.-working polymer photoresists as solubilizing agents for UV or excimer laser photolithog. for producing **semiconductor** devices. A preferred polymer for the photoresists is poly(p-vinylphenol) and diethylene glycol di-Me ether is used as a solvent for preparing the photoresist coating solns.

L5 ANSWER 24 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:622148 CAPLUS
DOCUMENT NUMBER: 111:222148
TITLE: Positive-working photoresist material for fine patterning on **semiconductor** device
INVENTOR(S): Endo, Masataka; Sasako, Masaru; Ogawa, Kazufumi
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01106036	A2	19890424	JP 1987-264492	19871020
PRIORITY APPLN. INFO.:			JP 1987-264492	19871020

AB The title material contains a nonphotosensitive **compd.** having an SO₂ group, a far UV-**sensitive compd.**, a resin, and a solvent. The material is useful for patterning by using an excimer laser, far UV radiation, and the like. Thus, on a **semiconductor** substrate, a composition comprising Meldrum's diazo, p-toluenesulfonyl chloride, p-cresol novolak, and diethylene glycol di-Me ether was applied, exposed with KrF excimer laser pulse radiation, and alkali-developed to give a precise pattern.

L5 ANSWER 25 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:166227 CAPLUS
DOCUMENT NUMBER: 106:166227
TITLE: Organic silicon-type far-ultraviolet sensitive resists
INVENTOR(S): Fujioka, Hirofumi; Inoue, Masami
PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61230140	A2	19861014	JP 1985-73116	19850404
PRIORITY APPLN. INFO.:			JP 1985-73116	19850404

AB Organic silicon-type far-UV-**sensitive** resists with dry-etching resistance, which are used in **semiconductor** device fabrication, contain resist membranes comprising organic polysilane films prepared by vaporizing **compds.** of the formula R(SiR₁R₂)_nR (R = H, halo; R₁, R₂ = organic moiety; n ≥ 1) under reduced pressure and applying vapor-phase photolysis to polymerize and deposit the silanes onto the substrates. The resists show good etching resistance and high resolution in pattern formation. Thus, diphenylsilane was vaporized at 1 + 10⁻² torr and 50°, introduced into a vessel, irradiated with far-UV light at room temperature for 30 min (partial pressure of diphenylsilane was 1 + 10⁻² torr) to form an organic silicon film 500 Å thick insol. in ordinary solvents. The film was irradiated with a 500-W Xe-Hg lamp through a mask and developed with a MeOH/Me₂CO mixture to obtain a pos.-type pattern, then etched with O at 15 mtorr and 0.15 W/cm² to show almost no change in the film thickness.

L5 ANSWER 26 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:157055 CAPLUS
DOCUMENT NUMBER: 106:157055

TITLE: Reactive polymers
 INVENTOR(S): Asanuma, Tadashi
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61218608	A2	19860929	JP 1985-59555	19850326
PRIORITY APPLN. INFO.:			JP 1985-59555	19850326

AB Polymers, radiation-crosslinkable at high **sensitivity** and useful for manufacture of **semiconductor** devices, comprise copolymers of divinylbenzene (I) and aromatic vinyl **compds.** with the product of the **mol** ratio of the vinyl monomer units to the total monomer units in the polymers (R) and intrinsic viscosity ($[\eta]$) in toluene at 30° at ≥ 0.005 . Thus, styrene and a mixture of 55% I and 45% ethylvinylbenzene were polymerized to give a copolymer with R 0.09 and $[\eta]$ 0.92. The copolymer in CHCl₃ was applied to a glass plate to form a 10- μ m-thick film (dry) which became insol. (in CHCl₃) upon irradiation of UV (300 W) from 20-cm distance.

L5 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:197029 CAPLUS

DOCUMENT NUMBER: 104:197029

TITLE: Positive photoresist compositions having deep UV response and photosensitive elements and thermally stable photochemically imaged systems containing them
 INVENTOR(S): Hopf, F. R.; Osuch, C. E.; McFarland, M. J.

PATENT ASSIGNEE(S): Allied Corp., USA

SOURCE: Eur. Pat. Appl., 51 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 140273	A2	19850508	EP 1984-112439	19841016
EP 140273	A3	19870624		
EP 140273	B1	19910911		
R: DE, FR, GB, IT				
CA 1279218	A1	19910122	CA 1984-466004	19841022
JP 60115932	A2	19850622	JP 1984-231115	19841101
JP 06023842	B4	19940330		
US 4857435	A	19890815	US 1987-24875	19870317
US 5059513	A	19911022	US 1989-366088	19890614
PRIORITY APPLN. INFO.:			US 1983-547815	A 19831101
			US 1986-814591	A1 19860102
			US 1987-24875	A3 19870317

AB A pos. photoresist composition **sensitive** to actinic radiation (deep UV, and visible light) is comprised of a mixture of an alkali-insol. photoactive **compd.** capable of being transformed into an alkali-soluble species upon exposure to actinic radiation, in an amount sufficient to render the mixture relative alkali insol. and a polymer comprising an amount of CONCO groups, such as maleimide and especially maleimide-substituted styrene copolymers, sufficient to render the mixture readily alkali soluble upon exposure to actinic radiation. Thus, maleimide-styrene copolymer 1.0 and 4,4'-bis(6-diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonyloxy)isopropylidenebiscyclohexane 1.0 g were dissolved

in DMF, spin-coated on a Si wafer, dried at 90° to give a 1.0 μ photoresist layer, exposed through a mask to a Hg-Xe lamp, and developed in 0.7% methylamine to give a highly resolved resist pattern.

L5 ANSWER 28 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:183203 CAPLUS
DOCUMENT NUMBER: 100:183203
TITLE: Radiation sensitive resists
PATENT ASSIGNEE(S): Nippon Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58028739	A2	19830219	JP 1981-127045	19810813
PRIORITY APPLN. INFO.:			JP 1981-127045	19810813

AB The adhesion between a photomask and a wafer is prevented during contact exposure for the formation of a pattern on a **semiconductor** substrate by using a radiation **sensitive** resist [e.g., ODUR 1013, a UV **sensitive** resist containing poly(Me isopropenyl ketone)] which does not generate N2 gas during irradiation and incorporation of a **compd.** (e.g., naphthoquinone diazides) or a group which generates N2 gas when irradiated.

L5 ANSWER 29 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1982:414795 CAPLUS
DOCUMENT NUMBER: 97:14795
TITLE: Photopolymer for **semiconductor** device fabrication
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56125415	A2	19811001	JP 1980-29200	19800310
PRIORITY APPLN. INFO.:			JP 1980-29200	A 19800310

AB A photoresist becoming soluble on UV exposure (≥300 nm) is composed of a polymer of H2C:CRCOR1 [R = H, Me; R1 = Ph, p-MeC6H4, p-MeOC6H4, p-Me2NC6H4, p-ClC6H4, p-BrC6H4] 10-90 and an addition polymerizable vinyl monomer 90-10%. The photoresist is especially useful in **semiconductor** device fabrication.

L5 ANSWER 30 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:506428 CAPLUS
DOCUMENT NUMBER: 95:106428
TITLE: Photoresists
PATENT ASSIGNEE(S): Fujitsu Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 56029232 A2 19810324 JP 1979-103521 19790816
 PRIORITY APPLN. INFO.: JP 1979-103521 A 19790816

AB Copolymers having 20-95 mol% tert-Bu methacrylate units are described for use as deep UV-sensitive photoresists. Thus, tert-Bu methacrylate-methacrylic acid-methacryloyl chloride-Me methacrylate copolymer (49:2:0.5:48.5 mol ratio; weight average mol. weight 200,000; .hivin.Mw/.hivin.Mn .simeq.3) was dissolved in EtOCH₂CH₂OAc and coated on a Si wafer. The resist layer was imagewise exposed to a 200 W D lamp and developed in iso-BuMeCO to give resist patterns showing an excellent sensitivity.

L5 ANSWER 31 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:112564 CAPLUS
 DOCUMENT NUMBER: 94:112564
 TITLE: Photo resists
 PATENT ASSIGNEE(S): Fujitsu Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55110240	A2	19800825	JP 1979-18118	19790219
JP 61032662	B4	19860728		

PRIORITY APPLN. INFO.: JP 1979-18118 A 19790219

AB Photochromic dye is added to photoresist compns. so that the sensitivity of the resists can be controlled. The resist compns. are especially useful for semiconductor device fabrication. 1,3,3-Trimethylindolinobenzospiropyran (I) derivs. are especially useful. The 6'-nitro and 6'-nitro-8'-methoxy derivs. of I increase the sensitivity, whereas the 6'-OH derivative of I decreases the sensitivity.

L5 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1976:439937 CAPLUS
 DOCUMENT NUMBER: 85:39937
 TITLE: Compound semiconductor photodiodes
 INVENTOR(S): Ichikawa, Fumio; Takano, Hiroshi
 PATENT ASSIGNEE(S): Oki Electric Industry Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 51015386	A2	19760206	JP 1974-86045	19740729
JP 52002278	B4	19770120		

PRIORITY APPLN. INFO.: JP 1974-86045 A 19740729

AB The sensitivity and sensitive band width of P-N junction type photodiodes prepared from GaAs, (Ga,Al)As, Ga(As,P), and GaP type compd. semiconductors are improved by treating the compd. semiconductors with H₂O₂. Thus, a photodiode prepared by bonding Si-doped GaAs (500 μ + 500 μ) on a TO-18 header was boiled 30 min in Me₂CO, then for 4 hr in 30% H₂O₂ solution (at 100°), and dried 2 hr at 250° to give a photodiode with peak sensitivity (relative) and sensitivity band width (a width of the sensitivity curve peak at half-maximum) of 121 and 38.5 Å, resp., vs. 51

and 30 Å, resp., for a control without H2O2 treatment.

L5 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:436590 CAPLUS
DOCUMENT NUMBER: 83:36590
TITLE: Photoresistant components
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd.
SOURCE: Fr. Demande, 17 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2223799	A1	19741025	FR 1974-11346	19740329
JP 49123785	A2	19741127	JP 1973-37179	19730330
JP 55021473	B4	19800610		
JP 50038483	A2	19750409	JP 1973-88025	19730807
JP 51038230	B4	19761020		
JP 50057394	A2	19750519	JP 1973-105733	19730918
JP 51038232	B4	19761020		
GB 1449956	A	19760915	GB 1974-13477	19740326
CA 1024734	A1	19780124	CA 1974-196044	19740326
AU 7467191	A1	19751016	AU 1974-67191	19740327
BE 813078	A1	19740715	BE 1974-142665	19740329
DE 2415466	A1	19741107	DE 1974-2415466	19740329
US 3900882	A	19750819	US 1974-456240	19740329
NL 160977	B	19790716	NL 1974-4306	19740329
PRIORITY APPLN. INFO.:			JP 1973-37179	A 19730330
			JP 1973-88025	A 19730807
			JP 1973-105733	A 19730918

AB From sep. crucibles, ZnS at 940° and CdS at 740° are evaporated and deposited on a glass substrate at 150° to form a Zn_{1-x}Cd_xS layer where x = 0.1. A solid solution of (Zn_{1-y}Cd_yTe)_{1-z}(In₂Te₃)_z in a crucible at 700-850° is evaporated and deposited over the 1st layer at 150°. The unit is heated at 300-700° for 3 min-3 hr to give a system where x = 0.1, y = 0.3 and z = 0.05. This heterojunction in a photo tube target has a high photoelec. sensitivity, especially in the blue region.

L5 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:65358 CAPLUS
DOCUMENT NUMBER: 76:65358
TITLE: Semiconductor photosensitive device
INVENTOR(S): Fujii, Akihiro
PATENT ASSIGNEE(S): Tokyo Shibaura Electric Co., Ltd.
SOURCE: Brit., 4 pp.
CODEN: BRXXAA
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1260026		19720112		
US 3671338		19720000	US	
PRIORITY APPLN. INFO.:			JP 1968-89594	19681209

AB A photosensitive device or target is provided in which the inset surface of the substrate can be formed in a flatter plane than prior art. E.g., one surface of an n-type Si substrate is mirror polished and a SiO₂ film containing P is formed on the surface, excluding the peripheral edge. A

single-crystal Si layer is then epitaxially grown on the surface. This layer is polycryst. over the SiO₂ layer and is of the same type as the substrate. The opposite surface is mirror polished to a predetd. thickness of substrate. On this surface is formed a SiO₂ film in which there are a number of openings having predetd. spacing. Island-shaped p-type regions are formed in the surface by diffusion of B, with the result that p-n junctions are formed between the substrate and each island. The P in the polycryst. layer is diffused into the substrate to form an n+-type layer in the surface. The polycryst. layer is then removed by chemical etching and the SiO₂ film is similarly removed, causing the substrate to have a recessed configuration. The etching treatments are carried out such that the polycryst. region only is 1st treated, e.g., by an etchant that will corrode the Si material but not the SiO₂ film and that the SiO₂ film is then treated by an etchant, e.g. F. Since the SiO₂ film permits light to pass if the thickness is kept within a predetd. limit, it is preferred that the film be retained to prevent deflection of light.

L5 ANSWER 35 OF 35 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1971:69441 CAPLUS
DOCUMENT NUMBER: 74:69441
TITLE: Infrared sensitive photoemitter
INVENTOR(S): Bell, Ronald Leslie
PATENT ASSIGNEE(S): Varian Associates
SOURCE: Ger., 6 pp.
CODEN: GWXXAW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1901333		19701029	DE	
PRIORITY APPLN. INFO.:			US	19680118

AB A photoemitter with improved ir response is prepared from a strongly p-doped Group III-V compound **semiconductor** or an alloy of 2 different III-V **semiconductors**. Approx. 3 monolayers of an alkali metal seps. the **semiconductor** from a layer of an n-conducting Cs₂O electron emitter. The compound **semiconductor** must have a band gap energy equal to or greater than the work function of the Cs₂O. By using Cs for the alkali metal deposit, it is possible to prepare the Cs₂O layer by oxidation of an extra thick deposit of Cs. By monitoring the photoresponse of the material during the oxidation of the Cs, it is also possible to terminate the oxidation at the excess Cs (n-dopant) concentration required for maximum photosensitivity (5 + 10¹⁸ to 5 + 10²⁰/cm³). Thus, InP doped with 5 + 10¹⁸ Zn acceptors/cm³ is covered with a layer of Cs of 10¹⁵ atoms/cm² (2-5 Å thick), and the Cs layer is covered with 1.6 + 10¹⁵ O atoms and 1.6 + 10¹⁵ Cs atoms/cm² (approx. 15 Å thickness of doped Cs₂O). This composition produces a photoemitter with a longer-wavelength threshold (1.0 μ) and a greater photosensitivity at all wavelengths than those obtained with a known GaAs/Cs photocathode. If an alloy with approx. 66% InP and 34% InAs doped with Zn is used in place of the Zn-doped InP, the long-wavelength threshold is extended to approx. 1.35 μ.

=> s l4 and surface (s) photo (8w) voltage
2191035 SURFACE
417109 SURFACES
2361497 SURFACE
(SURFACE OR SURFACES)
106862 PHOTO
1243 PHOTOS

```

108060 PHOTO
      (PHOTO OR PHOTOS)
305795 VOLTAGE
      30689 VOLTAGES
320395 VOLTAGE
      (VOLTAGE OR VOLTAGES)
      78 SURFACE (S) PHOTO (8W) VOLTAGE
L7      0 L4 AND SURFACE (S) PHOTO (8W) VOLTAGE

```

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=> s l4 and photo (8w) voltage
      106862 PHOTO
      1243 PHOTOS
      108060 PHOTO
      (PHOTO OR PHOTOS)
      305795 VOLTAGE
      30689 VOLTAGES
      320395 VOLTAGE
      (VOLTAGE OR VOLTAGES)
      393 PHOTO (8W) VOLTAGE
L8      0 L4 AND PHOTO (8W) VOLTAGE

```

```

=> s l4 and photo (s) voltage
      106862 PHOTO
      1243 PHOTOS
      108060 PHOTO
      (PHOTO OR PHOTOS)
      305795 VOLTAGE
      30689 VOLTAGES
      320395 VOLTAGE
      (VOLTAGE OR VOLTAGES)
      870 PHOTO (S) VOLTAGE
L9      1 L4 AND PHOTO (S) VOLTAGE

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=> display l9 1 ibib abs

```

L9 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1970:51070 CAPLUS

DOCUMENT NUMBER: 72:51070

TITLE: Light-induced changes in the conductivity of thin lipid membranes in the presence of iodine and iodide ion

AUTHOR(S): Mauzerall, David; Finkelstein, Alan

CORPORATE SOURCE: Rockefeller Univ., New York, NY, USA

SOURCE: Nature (London, United Kingdom) (1969), 224(5220), 690-2

CODEN: NATUAS; ISSN: 0028-0836

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pulses of light from a N laser source at 3371 Å were imposed on thin membranes formed from a CHCl₃-MeOH (2:1) solution containing lipid 30, addn 1. cholesterol 20, α-tocopherol 200 mg/ml solution, 2 + 10⁻⁵M I₂, and 10⁻²M I⁻; the lipid was prepared from a CHCl₃-MeOH extract of ox-brain white matter partitioned twice with H₂O to remove protein. In response to the light flash, the membrane conductance decreased and then returned towards its original value. The kinetics of the **photo-response** were obscured by the membrane capacitance, but this was obviated in a "**voltage-clamp**" experiment through the use of an operational amplifier, permitting a view of the kinetics of the **photo**-events undistorted by the elec. time consts. of the membranes. The current carriers in the membrane appeared to be polyiodides (such as I₅⁻) which, because of their large size and delocalized charge, had sufficient solubility in the low-dielec. constant, hydrophobic interior of the membrane to enter this phase. The simplest explanation of the findings was that the polyiodide ion was both the

charge carrier across the membrane and the **photo-sensitive mol.**

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NEWS	10	JAN 13	New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to INPADOC
NEWS	11	JAN 17	Pre-1988 INPI data added to MARPAT
NEWS	12	JAN 17	IPC 8 in the WPI family of databases including WPIFV
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=> s surface (8w) photovoltage
L1 3894 SURFACE (8W) PHOTOVOLTAGE

=> s (sensor or detector) (s) surface (8w) photovoltage
L2 88 (SENSOR OR DETECTOR) (S) SURFACE (8W) PHOTOVOLTAGE

=> s semiconduct? (s) surface (8w) photovoltage
L3 1102 SEMICONDUCT? (S) SURFACE (8W) PHOTOVOLTAGE

=> s l2 and l3
L4 28 L2 AND L3

=> s immobiliz? (8w) DNA
L5 3355 IMMOBILIZ? (8W) DNA

=> s l4 and l5
L6 0 L4 AND L5

=> s l3 and l5
L7 0 L3 AND L5

=> s l2 and l5
L8 0 L2 AND L5

=> s l1 and l5
L9 0 L1 AND L5

=> s immobiliz? (s) DNA
L10 6824 IMMOBILIZ? (S) DNA

=> s l4 and l10
L11 0 L4 AND L10

=> s l2 and l10
L12 0 L2 AND L10

=> display l4 1-28 ibib abs

L4 ANSWER 1 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:238315 CAPLUS
DOCUMENT NUMBER: 142:272876
TITLE: Surface photovoltage-based sensing of molecules
INVENTOR(S): Nauka, Krzysztof; Li, Zhiyong; Kamins, Theodore I.
PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 11 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005056867	A1	20050317	US 2003-665189	20030916
DE 102004024342	A1	20050428	DE 2004-102004024342	20040517
JP 2005091361	A2	20050407	JP 2004-266856	20040914
PRIORITY APPLN. INFO.:			US 2003-665189	A 20030916

AB Surface photovoltage is used for mol. sensing. The sensing is performed by exposing a surface of a **semiconductor** to mols., and sensing a change in **surface photovoltage** of the **semiconductor**. Chemical and biol. sensors may be based on such sensing.

L4 ANSWER 2 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:832877 CAPLUS
 DOCUMENT NUMBER: 141:431421
 TITLE: Effect of Tin Addition on Mesoporous Silica Thin Film and Its Application for **Surface Photovoltage NO2 Gas Sensor**
 AUTHOR(S): Yuliarto, Brian; Zhou, HaoShen; Yamada, Takeo; Honma, Itaru; Katsumura, Yosuke; Ichihara, Masaki
 CORPORATE SOURCE: Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, 305-8568, Japan
 SOURCE: Analytical Chemistry (2004), 76(22), 6719-6726
 CODEN: ANCHAM; ISSN: 0003-2700
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Self-ordered and structure-controlled transparent films of tin-modified mesoporous silica (Sn/Si ratio of 0.5-3%) were 1st prepared using a mol. surfactant template method employing spin coating. A **surface photovoltage** (SPV) NO2 gas **sensor** was then fabricated using these self-ordered tin-modified mesoporous silica thin films based on a metal-insulator-**semiconductor** structure. Highly sensitive tin-modified mesoporous silica was obtained that could detect NO2 gas concns. of ≥ 300 ppb at room temperature. The detection mechanism for NO2 is believed to involve both the surface area, which contributes to the change in dielec. constant, and the amount of tin incorporated, which contributes to the change in charge. In this SPV sensor, the optimal Sn/Si ratio of 0.5% delivered record-high sensing performance.
 REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:338133 CAPLUS
 DOCUMENT NUMBER: 141:182429
 TITLE: **Surface photovoltage** (SPV) measurements and light addressable potentiometric **sensors** (LAPS)
 AUTHOR(S): Uchida, Hidekazu; Aoki, Kazuhito; Katsube, Teruaki
 CORPORATE SOURCE: Department of Electrical and Electronic System, Faculty of Engineering, Saitama University, Sakuraku, Saitama, 338-8570, Japan
 SOURCE: Chemical Sensors (2003), 19(4), 171-182
 CODEN: KAGSEU
 PUBLISHER: Kagaku Sensa Kenkyukai Jimukyoku
 DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A review. Discussed are applications in ion sensing membrane, oxygen sensor, measurement of oxidation speed outside biol. cell, imaging technique, and assessment of semiconductors.

L4 ANSWER 4 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:939694 CAPLUS

DOCUMENT NUMBER: 140:132459

TITLE: **Surface photovoltage** studies of porous silicon in presence of polluting gases: toward a selective gas **sensor**

AUTHOR(S): Faglia, Guido; Baratto, Camilla; Sberveglieri, Giorgio; Gaburro, Zeno; Pavesi, Lorenzo

CORPORATE SOURCE: INFN (Italy) and Univ. degli Studi di Brescia, Brescia, I-25133, Italy

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2003), 5222(Nanocrystals, and Organic and Hybrid Nanomaterials), 12-20
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The work function of nano Porous Silicon (PS) was studied by the kelvin probe method as a function of the exposure to different gaseous species. Characterization was performed in dark and in presence of sub band and supra band gap light - Surface Photovoltage (SPV) measurements. Traces of ammonia and nitrogen dioxide change drastically the shape of SPV as a function of photon energy: light induces transitions from and to surface states produced by gas adsorption. The results foresee the possibility to improve semiconductor sensor selectivity by using monochromatic light at well defined frequency able to activate/deactivate surface states where species are adsorbed.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:363612 CAPLUS

DOCUMENT NUMBER: 139:29814

TITLE: **Surface photovoltage** of modified mesoporous silica film for NO₂ gas **sensor**

AUTHOR(S): Yuliarto, O. Brian; Asai, Keisuke; Yamada, Takeo; Zhou, Hao-Shen; Honma, Itaru

CORPORATE SOURCE: Department of Quantum Engineering and Systems Science, Graduate School of Engineering, The University of Tokyo, Tokyo, 113-8656, Japan

SOURCE: Chemical Sensors (2002), 18(Suppl. B), 142-144
CODEN: KAGSEU

PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Modified mesoporous silica film was prepared by direct synthesis method using sol-gel and spin coating. The surface photo voltage (SPV) technique was then applied for the tin-modified silica mesoporous film for NO₂ gas sensor. The sensor consists of Au/ modified mesoporous silica/ Si₃N₄/ SiO₂/ Si/ Al. Clear response was obtained at the NO₂ gas concentration ≥ 1 ppm at room temperature. The changes in the average value and phase of the a.c. photocurrent, and the responsibility were observed after exposure of NO₂ gas to the film sample. Compared with those of the pure silica mesoporous film, modified mesoporous silica film showed enhanced sensitivity for NO₂ gas sensor.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:569782 CAPLUS
 DOCUMENT NUMBER: 137:271289
 TITLE: NO and NO₂ gas **sensors** based on **surface photovoltage** system fabricated by self-ordered mesoporous silicate film
 AUTHOR(S): Zhou, Hao-Shen; Yamada, Takeo; Asai, Keisuke; Honma, Itaru; Uchida, Hidekazu; Katsube, Teruaki
 CORPORATE SOURCE: Energy Materials Group, Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, 305-8568, Japan
 SOURCE: Studies in Surface Science and Catalysis (2002), 141(Nanoporous Materials III), 623-630
 CODEN: SSCTDM; ISSN: 0167-2991
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The 1st NO and NO₂ gas sensors based on surface photo-voltage (SPV) semiconductor device system are fabricated by the metal/ SiO₂ (self-ordered hexagonal mesoporous) -/Si₃N₄/SiO₂/Si structure. Size controlled silicate hexagonal mesoporous film is successfully synthesized by spin coating on a Si₃N₄/SiO₂/Si silicon wafer using poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (Pluronic P123 =EO20PO70EO20) triblock copolymers as a template. The characteristics of mesoporous film are studied in XRD, TEM. The sensing properties of the self-ordered hexagonal mesoporous SPV system were studied by exposing to the NO or NO₂ gas and air repeatedly. The changes of the average value and phase of the a.c. photocurrent (I_{ph}) were observed between the NO or NO₂ gas and air. The response of the alternatively photocurrent is resulted from the phys. adsorption and chemical interaction between detected NO or NO₂ gas and the self-ordered hexagonal mesoporous film.
 REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:510591 CAPLUS
 DOCUMENT NUMBER: 137:303835
 TITLE: Application of a cubic-like mesoporous silica film to a surface photovoltage gas sensing system
 AUTHOR(S): Yamada, T.; Zhou, H. S.; Uchida, H.; Tomita, M.; Ueno, Y.; Honma, I.; Asai, K.; Katsube, T.
 CORPORATE SOURCE: Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, 305-8568, Japan
 SOURCE: Microporous and Mesoporous Materials (2002), 54(3), 269-276
 CODEN: MIMMFJ; ISSN: 1387-1811
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A self-ordered cubic-like mesoporous SiO₂ film was successfully fabricated in a metal-insulator-**semiconductor** (=Au/SiO₂ (cubic-like meso)/Si₃N₄/SiO₂/Si) device based on the **surface photovoltage** (SPV) system and applied to an NO gas **sensor**. The self-ordered cubic-like mesoporous SiO₂ film was synthesized by using as a template in spin coating a nonionic poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (PEO100-PP065-PEO100) type triblock copolymer surfactant. The sensing characteristics of the self-ordered cubic-like mesoporous SPV system were studied by repeated exposure to 100 ppm NO gas and standard air, as well as observation of the alternating (photo) current, which resulted from the phys. adsorption and chemical interactions between detected NO gas and the self-ordered cubic-like mesoporous film. In sensing NO gas, this cubic-like mesoporous SPV system exhibits a response nearly five times larger than that of a simple SPV sensor without mesoporous SiO₂ film. Even at room temperature, this mesoporous

SPV system exhibits a recoverable response. These results can be explained by the characteristics of the cubic-like mesoporous SiO₂ film including large surface area and a bi-continuous mesopore structure. This kind of mesoporous film has a great potential for application to highly sensitive and responsive gas sensors.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:6116 CAPLUS

DOCUMENT NUMBER: 136:236011

TITLE: NO gas **sensor** based on **surface photovoltage** system fabricated by self-ordered hexagonal mesoporous silicate film

AUTHOR(S): Zhou, Hao-Shen; Yamada, Takeo; Asai, Keisuke; Honma, Itaru; Uchida, Hidekazu; Katsube, Teruaki

CORPORATE SOURCE: Energy Electronics Institute, National Institute of Advanced Industrial Science and Technology, Tsukubo, Ibaraki, 305-8568, Japan

SOURCE: Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2001), 40(12), 7098-7102

CODEN: JAPNDE

PUBLISHER: Japan Society of Applied Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The 1st reported NO gas **sensor** based on a **surface photovoltage** (SPV) **semiconductor** device system is fabricated with a metal/SiO₂ (self-ordered hexagonal mesoporous)/Si₃N₄/SiO₂/Si structure (MIS). A size controlled silicate mesoporous film is successfully synthesized by spin coating on a Si₃N₄/SiO₂/Si silicon wafer using poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (Pluronic P123 = EO₂₀PO₇₀EO₂₀) triblock copolymers as a template. The characteristics of the mesoporous films were studied by XRD and transmission electron microscope (TEM). The sensing properties of the self-ordered hexagonal mesoporous SPV system were studied by repeated exposure to NO gas and air. The changes in the average value and phase of the a.c. photocurrent (I_{ph}) were observed after exposure of the films to 100 ppm NO gas. The response of the alternative photocurrent results from the phys. adsorption and chemical interaction between detected NO gases and the self-ordered hexagonal mesoporous film.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 28 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2004(49):6310 COMPENDEX

TITLE: Effect of tin addition on mesoporous silica thin film and its application for **surface photovoltage** NO₂ gas **sensor**.

AUTHOR: Yuliarto, Brian (Energy Electronics Institute Natl. Inst. Adv. Indust. Sci. T., Tsukuba 305-8568, Japan); Zhou, HaoShen; Yamada, Takeo; Honma, Itaru; Katsumura, Yosuke; Ichihara, Masaki

SOURCE: Analytical Chemistry v 76 n 22 Nov 15 2004 2004.p 6719-6726

CODEN: ANCHAM ISSN: 0003-2700

PUBLICATION YEAR: 2004

DOCUMENT TYPE: Journal

TREATMENT CODE: Experimental

LANGUAGE: English

AN 2004(49):6310 COMPENDEX

AB Self-ordered and structure-controlled transparent films of tin-modified mesoporous silica (Sn/Si ratio of 0.5-3%) were first prepared using a molecule surfactant template method employing spin coating. A

surface photovoltage (SPV) NO₂ gas sensor was then fabricated using these self-ordered tin-modified mesoporous silica thin films based on a metal-insulator- **semiconductor** structure. Highly sensitive tin-modified mesoporous silica was obtained that could detect NO₂ gas concentrations of as low as 300 ppb at room temperature. The detection mechanism for NO₂ is believed to involve both the surface area, which contributes to the change in dielectric constant, and the amount of tin incorporated, which contributes to the change in charge. It was found that, in this SPV **sensor**, the optimal Sn/Si ratio of 0.5% delivered record-high sensing performance. 25 Refs.

L4 ANSWER 10 OF 28 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2004(21):9582 COMPENDEX
TITLE: **Surface Photovoltage** studies of Porous Silicon in presence of polluting gases: Toward a selective gas **sensor**.
AUTHOR: Faglia, Guido (INFM University of Brescia, I-25133 Brescia, Italy); Baratto, C.; Sberveglieri, G.; Gaburro, Z.; Pavesi, L.
MEETING TITLE: Nanocrystals, and Organic and Hybrid Nanomaterials.
MEETING ORGANIZER: SPIE
MEETING LOCATION: San Diego, CA, United States
MEETING DATE: 04 Aug 2003-08 Aug 2003
SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 5222 2003.p 12-20
CODEN: PSISDG ISSN: 0277-786X
PUBLICATION YEAR: 2003
MEETING NUMBER: 62863
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Theoretical
LANGUAGE: English

AN 2004(21):9582 COMPENDEX

AB The work function of nano Porous Silicon (PS) has been studied by the kelvin probe method as a function of the exposure to different gaseous species. Characterisation has been performed in dark and in presence of sub band and supra band gap light - **Surface Photovoltage (SPV)** measurements. Traces of ammonia and nitrogen dioxide change drastically the shape of SPV as a function of photon energy: light induces transitions from and to surface states produced by gas adsorption. The results foresee the possibility to improve **semiconductor sensor** selectivity by using monochromatic light at well defined frequency able to activate/deactivate surface states where species are adsorbed. 38 Refs.

L4 ANSWER 11 OF 28 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2003(21):3855 COMPENDEX
TITLE: Proceedings of SPIE: Nano- and microtechnology: Materials, process, packaging, and systems.
MEETING TITLE: Nano- and Microtechnology: Materials, Processes, Packaging, and Systems.
MEETING ORGANIZER: SPIE; PMIT University; University of Arkansas; Cooperative Research Centre for microTechnology; Department of Defence
MEETING LOCATION: Melbourne, VIC., Australia
MEETING DATE: 16 Dec 2002-18 Dec 2002
SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 4936 2002. 474p
CODEN: PSISDG ISSN: 0277-786X
PUBLICATION YEAR: 2002
MEETING NUMBER: 60992
DOCUMENT TYPE: Conference Proceedings
TREATMENT CODE: Theoretical
LANGUAGE: English

AN 2003(21):3855 COMPENDEX

AB The proceedings contains 57 papers from the Conference of SPIE : Nano- and Microtechnology : Materials, Processes, Packaging, and Systems. Topics discussed include: new technique for the manipulation of nanostructured metal-oxide properties; quantum models for Parrondo's games; a world-to-chip socket for microfluidic prototype development; selective **semiconductor** gas **sensor** based on **surface photovoltage**; modeling and control of a micromagnetic bearing; and micromachined magnetometer-accelerometer for navigation systems. (Edited abstract)

L4 ANSWER 12 OF 28 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2003(21):3825 COMPENDEX

TITLE: A selective **semiconductor** gas **sensor** based on **surface photovoltage**.

AUTHOR: Faglia, Guido (INFN University of Brescia, 25133-I Brescia, Italy); Baratto, Camilla; Comini, Elisabetta; Sberveglieri, Giorgio

MEETING TITLE: Nano- and Microtechnology: Materials, Processes, Packaging, and Systems.

MEETING ORGANIZER: SPIE; PMIT University; University of Arkansas; Cooperative Research Centre for microTechnology; Department of Defence

MEETING LOCATION: Melbourne, VIC., Australia

MEETING DATE: 16 Dec 2002-18 Dec 2002

SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 4936 2002.p 186-193

CODEN: PSISDG ISSN: 0277-786X

PUBLICATION YEAR: 2002

MEETING NUMBER: 60992

DOCUMENT TYPE: Conference Article

TREATMENT CODE: Theoretical; Experimental

LANGUAGE: English

AN 2003(21):3825 COMPENDEX

AB The work function of tin oxide has been studied by the kelvin probe method as a function of the exposure to different gaseous species. Characterisation has been performed in dark and in presence of sub band and supra band gap light (**Surface Photovoltage** measurements). The light changes the response towards gases in particular at room temperature. The results foresee the possibility to improve **semiconductor sensor** selectivity by using monochromatic light at well defined frequency able to activate/deactivate surface states where species are adsorbed. 24 Refs.

L4 ANSWER 13 OF 28 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2002(10):112 COMPENDEX

TITLE: NO gas **sensor** based on **surface photovoltage** system fabricated by self-ordered hexagonal mesoporous silicate film.

AUTHOR: Zhou, Hao-Shen (Energy Materials Group Energy Electronics Institute Natl Inst Adv. Indust. Sci. Technol., Tsukuba, Ibaraki 305-8568, Japan); Yamada, Takeo; Asai, Keisuke; Honma, Itaru; Uchida, Hidekazu; Katsube, Teruaki

SOURCE: Japanese Journal of Applied Physics, Part 1: Regular Papers and Short Notes and Review Papers, v 40 n 12 December 2001 2001.p 7098-7102

CODEN: JAPNDE ISSN: 0021-4922

PUBLICATION YEAR: 2001

DOCUMENT TYPE: Journal

TREATMENT CODE: Experimental

LANGUAGE: English

AN 2002(10):112 COMPENDEX

AB The first reported NO gas **sensor** based on a **surface photovoltage** (SPV) **semiconductor** device system is

fabricated with a metal/SiO₂ (self-ordered hexagonal mesoporous)/Si₃N₄/SiO₂/Si structure (MIS). A size controlled silicate mesoporous film is successfully synthesized by spin coating on a Si₃N₄/SiO₂ /Si silicon wafer using poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (Pluronic P123 = EO₂₀PO₇₀EO₂₀) triblock copolymers as a template. The characteristics of the mesoporous films were investigated by X-ray diffraction (XRD) and transmission electron microscope (TEM). The sensing properties of the self-ordered hexagonal mesoporous SPV system have been investigated by repeated exposure to NO gas and air. The changes in the average value and phase of the AC photocurrent (I_{ph}) have been observed after exposure of the films to 100 ppm NO gas. The response of the alternative photocurrent results from the physical adsorption and chemical interaction between detected NO gases and the self-ordered hexagonal mesoporous film. 16 Refs.

L4 ANSWER 14 OF 28 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 1995(4):6787 COMPENDEX
 TITLE: Integrated taste **sensor** using **surface photovoltage** technique.
 AUTHOR: Kanai, Y. (Saitama Univ, Jpn); Shimizu, M.; Uchida, H.; Nakahara, H.; Zhou, C.G.; Maekawa, H.; Katsube, T.
 MEETING TITLE: Proceedings of the 7th International Conference on Solid-State Sensors and Actuators.
 MEETING LOCATION: Yokohama, Jpn
 MEETING DATE: 07 Jun 1993-10 Jun 1993
 SOURCE: Sensors and Actuators, B: Chemical v B20 n 2-3 June 1994.p 175-179
 CODEN: SABCEB ISSN: 0925-4005
 PUBLICATION YEAR: 1994
 MEETING NUMBER: 21391
 DOCUMENT TYPE: Journal
 TREATMENT CODE: Experimental
 LANGUAGE: English

AN 1995(4):6787 COMPENDEX

AB A **surface photovoltage** (SPV) technique has been applied to construct a taste **sensor** by combining modified LB (Langmuir-Blodgett) methods to immobilize taste-sensitive membranes. The contactless approach of the SPV method provides a simple sensing system with considerable patterning flexibility. Several kinds of artificial lipid membranes are monolithically integrated on a **semiconductor** surface as taste-sensitive materials and the surface potential change caused by the reactions with taste substances is detected by scanning a light beam along the **semiconductor** surface. First it is shown that the uniformly oriented lipid membranes exhibit different responses to five taste substances, with high sensitivity and fast response rate. Then, a preliminary experimental result to identify commercial drinks is demonstrated. (Author abstract) 10 Refs.

L4 ANSWER 15 OF 28 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 1995(1):3961 COMPENDEX
 TITLE: Near-field microscopy with a semiconductor probe tip.
 AUTHOR: Hipp, M. (Univ of Konstanz, Konstanz, Ger); Mertz, J.; Mlynek, J.; Marti, O.
 MEETING TITLE: Proceedings of the 21st International Quantum Electronics Conference (IQEC'94).
 MEETING ORGANIZER: Optical Society of America; IEEE; American Physical Society
 MEETING LOCATION: Anaheim, CA, USA
 MEETING DATE: 08 May 1994-13 May 1994
 SOURCE: Proceedings of the International Quantum Electronics Conference (IQEC'94) 1994. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA.p 205-206
 CODEN: 001601
 ISBN: 0-7803-1973-7

PUBLICATION YEAR: 1994
MEETING NUMBER: 20873
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Experimental
LANGUAGE: English

AN 1995(1):3961 COMPENDEX

AB We present quantitative measurements of mechanical forces induced by evanescent light on a **semiconductor** probe tip by the **surface-photovoltage** effect (SPV). The **semiconducting** tip is used as a sensitive subwavelength-sized light **detector**. Scanning techniques allow the profiling of laterally inhomogeneous light distributions, such as standing wave patterns. In our experimental setup an evanescent wave is generated by using the standard technique of total internal reflection (TIR) of a laser beam inside a glass prism. The probe tip (n-doped silicon) of an scanning force microscope is placed inside the region of the evanescent field. The force exerted on the tip is measured by monitoring the deflection of the cantilever. The experiment is performed under ambient conditions and in moderate vacuum. The dominant force on the probe tip in this configuration is electrostatic. Charges on the tip surface locally induce bound surface charges on the prism, generating a net attractive force between the tip and glass (Fig. 1). The illumination of the tip with visible light has the effect of generating electron-hole pairs in the tip. These pairs are separated by the depletion-layer potential and result in a net reduction of the band bending, an effect known as **surface photovoltage**. In the regime of a modest light intensity I , the SPV may be approximated by $V_{spv} \text{ equals } A \ln(1 \text{ plus } BI)$, where A and B are parameters independent of I . When I is modulated, a modulation of the force is induced. In our experiment $I(t)$ is modulated at the cantilever resonance frequency by an acousto-optic modulator. The resultant ac force on the cantilever is monitored and is found to be in good agreement with theory. In this way, the cantilever response provides a calibrated measure of the light intensity incident on the probe tip. The performance of this detection mechanism can be gauged by scanning over the standing evanescent wave produced by backreflecting the TIR beam (Fig. 1). From the contrast in the detected fringes and the known fringe spacing, the lateral resolution is calculated to be about 170 nm. The sensitivity is limited by thermal noise in the cantilever motion and is estimated to be 0.1 pW in moderate vacuum conditions. The advantage of this near-field detection mechanism is that it can easily be combined with the well-established techniques of the scanning force microscopy. In the light-driven noncontact mode, topographic and near-field profiles can be obtained approximately independently on conductors and insulators alike. In addition, a voltage drive off resonance provides simultaneous information on the local charge distributions. (Author abstract) 3 Refs.

L4 ANSWER 16 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 2004:7908745 INSPEC

DOCUMENT NUMBER: A2004-09-8280T-023; B2004-05-7230L-003

TITLE: **Surface photovoltage** studies of porous silicon in presence of polluting gases: toward a selective gas **sensor**

AUTHOR: Faglia, G.; Baratto, C.; Sberveglieri, G.; (INFN, Brescia Univ., Italy), Gaburro, Z.; Pavesi, L.

SOURCE: Proceedings of the SPIE - The International Society for Optical Engineering (2003), vol.5222, no.1, p. 12-20, 38 refs.

CODEN: PSISDG, ISSN: 0277-786X

SICI: 0277-786X(2003)5222:1L:12:SPSP;1-I

Price: 0277-786X/03/\$15.00

Published by: SPIE-Int. Soc. Opt. Eng, USA

Conference: Nanocrystals, and Organic and Hybrid

Nanomaterials, San Diego, CA, USA, 4 July-8 Aug. 2003

DOCUMENT TYPE: Conference; Conference Article; Journal

TREATMENT CODE: Application; Experimental
COUNTRY: United States
LANGUAGE: English

AN 2004:7908745 INSPEC DN A2004-09-8280T-023; B2004-05-7230L-003
AB The work function of nano Porous Silicon (PS) has been studied by the kelvin probe method as a function of the exposure to different gaseous species. Characterisation has been performed in dark and in presence of sub band and supra band gap light - **Surface Photovoltage** (SPV) measurements. Traces of ammonia and nitrogen dioxide change drastically the shape of SPV as a function of photon energy: light induces transitions from and to surface states produced by gas adsorption. The results foresee the possibility to improve **semiconductor sensor** selectivity by using monochromatic light at well defined frequency able to activate/deactivate surface states where species are adsorbed

L4 ANSWER 17 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 2003:7713695 INSPEC
DOCUMENT NUMBER: A2003-19-8280T-007; B2003-10-7230L-003
TITLE: Selective **semiconductor gas sensor** based on **surface photovoltage**
AUTHOR: Faglia, G.; Baratto, C.; Comini, E.; Sberveglieri, G. (INFM, Univ. of Brescia, Italy)
SOURCE: Proceedings of the SPIE - The International Society for Optical Engineering (2002), vol.4936, p. 186-93, 24 refs.
CODEN: PSISDG, ISSN: 0277-786X
SICI: 0277-786X(2002)4936L:186:SSSB;1-#
Price: 0277-786X/02/\$15.00
Published by: SPIE-Int. Soc. Opt. Eng, USA
Conference: Nano- and Microtechnology: Materials, Processes, Packaging, and Systems, Melbourne, Vic., Australia, 16-18 Dec. 2002
Sponsor(s): SPIE; RMIT Univ.; Univ. Arkansas; Nat. Inst. Adv. Ind. Sci. & Technol; et al
DOCUMENT TYPE: Conference; Conference Article; Journal
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English

AN 2003:7713695 INSPEC DN A2003-19-8280T-007; B2003-10-7230L-003
AB The work function of tin oxide has been studied by the kelvin probe method as a function of the exposure to different gaseous species. Characterisation has been performed in dark and in presence of sub band and supra band gap light (**Surface Photovoltage** measurements). The light changes the response towards gases in particular at room temperature. The results foresee the possibility to improve **semiconductor sensor** selectivity by using monochromatic light at well defined frequency able to activate/deactivate surface states where species are adsorbed

L4 ANSWER 18 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 2002:7171089 INSPEC
DOCUMENT NUMBER: A2002-06-8280T-003; B2002-03-7230L-007
TITLE: NO gas **sensor** based on **surface photovoltage** system fabricated by self-ordered hexagonal mesoporous silicate film
AUTHOR: Hao-Shen Zhou; Yamada, T.; (Energy Electron. Inst., Nat. Inst. of Adv. Ind. Sci. & Technol., Tsukuba, Japan), Asai, K.; Honma, I.; Uchida, H.; Katsube, T.
SOURCE: Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (Dec. 2001), vol.40, no.12, p. 7098-102, 16 refs.
CODEN: JAPNDE, ISSN: 0021-4922
SICI: 0021-4922(200112)40:12L:7098:SBSP;1-K

Published by: Japan Soc. Appl. Phys, Japan

DOCUMENT TYPE:

Journal

TREATMENT CODE:

Practical; Experimental

COUNTRY:

Japan

LANGUAGE:

English

AN 2002:7171089 INSPEC DN A2002-06-8280T-003; B2002-03-7230L-007

AB The first reported NO gas **sensor** based on a **surface photovoltage** (SPV) **semiconductor** device system is fabricated with a metal/SiO₂ (self-ordered hexagonal mesoporous)/Si₃N₄/SiO₂/Si structure (MIS). A size controlled silicate mesoporous film is successfully synthesized by spin coating on a Si₃N₄/SiO₂/Si silicon wafer using poly(ethylene oxide)-poly(propylene oxide)poly(ethylene oxide) (Plurortic P123=EO20PO70EO20) triblock copolymers as a template. The characteristics of the mesoporous films were investigated by X-ray diffraction (XRD) and transmission electron microscope (TEM). The sensing properties of the self-ordered hexagonal mesoporous SPV system have been investigated by repeated exposure to NO gas and air. The changes in the average value and phase of the AC photocurrent (I_{ph}) have been observed after exposure of the films to 100 ppm NO gas. The response of the alternative photocurrent results from the physical adsorption and chemical interaction between detected NO gases and the self-ordered hexagonal mesoporous film

L4 ANSWER 19 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 2000:6671536 INSPEC

DOCUMENT NUMBER: A2000-18-7240-006

TITLE: Near-field surface photovoltage

AUTHOR: Shikler, R.; Rosenwaks, Y. (Dept. of Phys. Electron., Tel Aviv Univ., Israel)

SOURCE: Applied Physics Letters (7 Aug. 2000), vol.77, no.6, p. 836-8, 23 refs.

CODEN: APPLAB, ISSN: 0003-6951

SICI: 0003-6951(20000807)77:6L.836:NFSP;1-P

Price: 0003-6951/2000/77(6)/836(3)/\$17.00

Doc.No.: S0003-6951(00)04132-2

Published by: AIP, USA

DOCUMENT TYPE:

Journal

TREATMENT CODE:

Experimental

COUNTRY:

United States

LANGUAGE:

English

AN 2000:6671536 INSPEC DN A2000-18-7240-006

AB A phenomenon called near-field **surface photovoltage** is presented. It is based on inducing **photovoltage** only at a **semiconductor** space-charge region using near-field illumination. The photovoltage is obtained by measuring the contact potential difference between an optical near-field force **sensor** and a **semiconductor** surface under illumination. It is shown that the near-field illumination induces photovoltage at the **surface** which is principally different from **photovoltage** induced by far-field illumination. The mechanisms that govern the different far-field and near-field photovoltage response are discussed

L4 ANSWER 20 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1999:6177600 INSPEC

DOCUMENT NUMBER: A1999-07-8738-003; B1999-04-7230L-013

TITLE: Highly stable tea taste detection using SPV method and ion electrodes

AUTHOR: Wenyi, Z.; Abiko, T.; Watanabe, S.; Vasconcelos, E.; Uchida, H.; Katsube, T. (Saitama Univ., Urawa, Japan)

SOURCE: Transactions of the Institute of Electrical Engineers of Japan, Part E (Dec. 1998), vol.118-E, no.12, p. 608-13, 9 refs.

CODEN: DGMEM9, ISSN: 1341-8939

SICI: 1341-8939(199812)118/E:12L.608:HSTD;1-0

Published by: Inst. Electr. Eng. Japan, Japan

DOCUMENT TYPE: Journal

TREATMENT CODE: Practical; Experimental

COUNTRY: Japan

LANGUAGE: Japanese

AN 1999:6177600 INSPEC DN A1999-07-8738-003; B1999-04-7230L-013

AB Improvement of the stabilization and repeatability of the sensor response was investigated for the development of a tea taste sensor. For a semiconductor taste sensor (SPV sensor) with a lipid membrane as the sensitive film, various washing methods were studied for electrode cleaning after tea taste measurement, since hydrophobic molecules remain on the surface even after a water rinse. As a result, it was shown that an effective refreshing method is possibly found by the selection of washing chemicals, although the cleaning effects are different for the different lipid membranes. It was then shown that a commercial ion sensor could be successfully applied as a tea taste sensor. The response was highly stable for repeated measurements of tea taste

L4 ANSWER 21 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1998:5981434 INSPEC

DOCUMENT NUMBER: A1998-17-8280T-036; B1998-09-7230G-009; C1998-09-7410H-008

TITLE: The study of light-addressable potentiometric image sensor

AUTHOR: Jun Xie; Ping Wang; Li Rong (Dept. of Life Sci. & Med. Eng., Zhejiang Univ., Hangzhou, China)

SOURCE: Chinese Journal of Scientific Instrument (Feb. 1998), vol.19, no.1, p. 50-5, 5 refs.
CODEN: YYXUDY, ISSN: 0254-3087
SICI: 0254-3087(199802)19:1L:50:SLAP;1-V
Published by: China Instrum. Soc, China

DOCUMENT TYPE: Journal

TREATMENT CODE: Practical; Experimental

COUNTRY: China

LANGUAGE: Chinese

AN 1998:5981434 INSPEC DN A1998-17-8280T-036; B1998-09-7230G-009; C1998-09-7410H-008

AB This paper introduces the novel basic principle, structure and characteristics of the light-addressable potentiometric image sensor. It applies silicon-based semiconductor manufacture technology, light-addressable scanning and control circuits based on laser light source and computer processing. It also discusses related experimental results. The testing results prove that the light-addressable potentiometric image sensor has advantages in imaging capability. We will develop a novel type of integrated chemical and biological image sensor using this device in future

L4 ANSWER 22 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1997:5708783 INSPEC

DOCUMENT NUMBER: A1997-21-8160C-032; B1997-11-2550E-044

TITLE: Whole-wafer plasma damage evaluation

AUTHOR: Hoff, A.M.; Lagowski, J.; (Univ. of South Florida, Tampa, FL, USA), Nauka, K.; Esry, T.C.; Edelman, P.; Jastrzebski, L.

AUTHOR: Editor(s): Claeys, C.L.; Stallhofer, P.; Rai-Choudhury, P.; Maurtis, J.E.

SOURCE: Proceedings of the Fourth International Symposium on High Purity Silicon, 1996, p. 544-53 of xi+586 pp., 13 refs.
Editor(s): Claeys, C.L.; Stallhofer, P.; Rai-Choudhury, P.; Maurtis, J.E.
Published by: Electrochem. Soc, Pennington, NJ, USA
Conference: Proceedings of High Purity Silicon IV (ISBN 1 56677 156 0), San Antonio, TX, USA, 6-11 Oct.

1996

DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English

AN 1997:5708783 INSPEC DN A1997-21-8160C-032; B1997-11-2550E-044

AB A new approach to plasma damage monitoring provides real-time, non-contact measurement of dielectric charge build-up, radiation damage, and metallic contamination. In this approach, re-usable oxidized wafers are used rather than electrical test structures. Whole-wafer maps produced from the measurements are effective in evaluating the influence that process parameters and process tool characteristics may have on the generation of plasma damage

L4 ANSWER 23 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1997:5653569 INSPEC

DOCUMENT NUMBER: A1997-18-8280T-002; B1997-09-7230-057

TITLE: Integrated taste sensor using a semiconductor ion sensor

AUTHOR: Zheng Wenyi; Hatakeyama, H.; Uchida, H.; Maekawa, H.; Katsube, T. (Fac. of Eng., Saitama Univ., Urawa, Japan)

SOURCE: Transactions of the Institute of Electrical Engineers of Japan, Part E (June 1997), vol.117-E, no.6, p. 326-31, 9 refs.

CODEN: DGMEM9, ISSN: 1341-8939

SICI: 1341-8939(199706)117/E:6L:326:ITSU;1-8

Published by: Inst. Electr. Eng. Japan, Japan

DOCUMENT TYPE: Journal

TREATMENT CODE: Practical; Experimental

COUNTRY: Japan

LANGUAGE: Japanese

AN 1997:5653569 INSPEC DN A1997-18-8280T-002; B1997-09-7230-057

AB A monolithically integrated taste **sensor** was constructed using a **surface photovoltage** (SPV) technique. The contactless approach of the SPV method provides a simple electrode structure with patterning flexibility. Polyvinylbutyral membrane was successfully used to immobilize artificial lipid membranes as an ion sensitive material. For the sensitivity enhancement, an impedance measurement method combined with a new differential measurement method was proposed and the system was applied to discriminate the quality of sweet substances. It was finally demonstrated by the preliminary experiment that different kinds of commercial sugars and wines were distinguishable

L4 ANSWER 24 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1995:4911186 INSPEC

DOCUMENT NUMBER: A1995-08-0760P-015

TITLE: Near-field microscopy with a semiconductor probe tip

AUTHOR: Hipp, M.; Mertz, J.; Mlynek, J.; Marti, O. (Dept. for Phys., Konstanz Univ., Germany)

SOURCE: IQEC '94. Summaries of papers presented at the International Quantum Electronics Conference. Vol.9. 1994 Technical Digest Series Conference Edition (Cat. No.94CH3462-9), 1994, p. 205-6 of xvi+256 pp., 3 refs. ISBN: 0 7803 1973 7

Published by: Opt. Soc. America, Washington, DC, USA

Conference: IQEC'94. International Quantum Electronics Conference, Anaheim, CA, USA, 8-13 May 1994

Sponsor(s): Opt. Soc. America; IEEE/Lasers &

Electro-Opt. Soc.; American Phys. Soc.; U.S. Joint

Council on Quantum Electron.; Int. Council on Quantum

Electron.; Int Comm. Optics; Int. Union of Pure &

Appl. Phys

DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English

AN 1995:4911186 INSPEC DN A1995-08-0760P-015

AB Summary form only given. We present quantitative measurements of mechanical forces induced by evanescent light on a **semiconductor** probe tip by the **surface-photovoltage** effect (SPV). The **semiconducting** tip is used as a sensitive subwavelength-sized light **detector**. Scanning techniques allow the profiling of laterally inhomogeneous light distributions, such as standing wave patterns. In our experimental setup an evanescent wave is generated by using the standard technique of total internal reflection (TIR) of a laser beam inside a glass prism. The probe tip (n-doped silicon) of a scanning force microscope is placed inside the region of the evanescent field

L4 ANSWER 25 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1994:4798646 INSPEC

DOCUMENT NUMBER: A1994-23-8280-015; B1994-12-7230J-003

TITLE: Integrated taste **sensor** using **surface photovoltage** technique

AUTHOR: Kanai, Y.; Shimizu, M.; Uchida, H.; (Fac. of Eng., Saitama Univ., Urawa, Japan), Nakahara, H.; Zhou, C.G.; Maekawa, H.; Katsube, T.

SOURCE: Sensors and Actuators B (Chemical) (June 1994), vol.B20, no.2-3, p. 175-9, 10 refs.

CODEN: SABCEB, ISSN: 0925-4005

Price: 0925-4005/94/\$07.00

Conference: 7th International Conference on Solid State Sensors and Actuators (Transducers '93), Yokohama, Japan, 7-10 June 1993

DOCUMENT TYPE: Conference; Conference Article; Journal

TREATMENT CODE: Application; Experimental

COUNTRY: Switzerland

LANGUAGE: English

AN 1994:4798646 INSPEC DN A1994-23-8280-015; B1994-12-7230J-003

AB A **surface photovoltage** (SPV) technique has been applied to construct a taste **sensor** by combining modified LB (Langmuir-Blodgett) methods to immobilize taste-sensitive membranes. The contactless approach of the SPV method provides a simple sensing system with considerable patterning flexibility. Several kinds of artificial lipid membranes are monolithically integrated on a **semiconductor** surface as taste-sensitive materials and the surface potential change caused by the reactions with taste substances is detected by scanning a light beam along the **semiconductor** surface. First it is shown that the uniformly oriented lipid membranes exhibit different responses to five taste substances, with high sensitivity and fast response rate. Then, a preliminary experimental result to identify commercial drinks is demonstrated

L4 ANSWER 26 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1989:3493113 INSPEC

DOCUMENT NUMBER: A1989-135455

TITLE: Gas adsorption on phthalocyanines and its effects on electrical properties

AUTHOR: Wright, J.D. (Chem. Lab., Kent Univ., Canterbury, UK)

SOURCE: Progress in Surface Science (1989), vol.31, no.1-2, p. 1-60, 241 refs.

CODEN: PSSFBP, ISSN: 0079-6816

Price: 0079-6816/89/\$0.00+.50

DOCUMENT TYPE: Journal

TREATMENT CODE: Bibliography; General Review

COUNTRY: United Kingdom

LANGUAGE: English

AN 1989:3493113 INSPEC DN A1989-135455

AB This review considers the factors which influence the adsorption of gases onto single crystals and films of phthalocyanines, and the consequent changes in their electrical properties, which form the basis for the use of phthalocyanines as **semiconducting gas sensors**. Experimental results on the structure, morphology and surface chemical composition of phthalocyanine films as a function of preparation conditions and subsequent treatment are first considered. The implications of these results and of the molecular and electronic structure of the phthalocyanine molecule for the interactions between gases and phthalocyanine surfaces are then discussed followed by a review of experimental methods for characterising adsorbed species, including infra red-, thermal desorption-, X-ray photoelectron- and Auger spectroscopies, and the study of heats of adsorption and of **surface photovoltages**. The effects of adsorbed gases on electrical properties of phthalocyanine single crystals and films are reviewed in detail in the light of the above information, with particular reference to the chemical and physical factors which control the magnitude, rate and reversibility of the observed changes in **semiconductivity** and photoconductivity. Finally, the implications of this extensive knowledge for the design and optimisation of improved chemical **sensors** are discussed

L4 ANSWER 27 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1986:2739756 INSPEC

DOCUMENT NUMBER: A1986-101792; B1986-058818

TITLE: Studies on imaging photosensitive materials

AUTHOR: Young Soon Kim; Tae Won Kang (Dept. of Chem., Dongguk Univ., South Korea)

SOURCE: Journal of Korea Institute of Electronics Engineers (Jan. 1986), vol.23, no.1, p. 58-64, 14 refs.
CODEN: JKEEAX, ISSN: 0379-7848

DOCUMENT TYPE: Journal

TREATMENT CODE: Application; Experimental

COUNTRY: Korea, Democratic Peoples Republic of

LANGUAGE: Korean

AN 1986:2739756 INSPEC DN A1986-101792; B1986-058818

AB The authors have investigated the relation between the electrophotographic characteristic and the **surface photovoltage** of a zinc oxide photoreceptor which was made by the double adsorption of acidic dye and basic dye. The electrophotographic sensitivity was 4.0 to 11.2×10^{-1} cm²/erg, and although generally, the electrophotographic sensitivity range was below 590 nm, in the authors' study it was above 630 nm. This confirmed that the material is useful as a photoreceptor for the He-Ne laser printer. Also, it was shown that the desensitizing phenomena of the intrinsic photoresponse of zinc oxide could be removed by the double adsorption. Since the sample displayed the photovoltaic effect in the infrared region of 1250 nm, it could be used for the manufacture of infrared imaging devices and **sensors**

L4 ANSWER 28 OF 28 INSPEC (C) 2006 IEE on STN

ACCESSION NUMBER: 1972:344464 INSPEC

DOCUMENT NUMBER: A1972-006790; B1972-004563; C1972-002757

TITLE: Methods of measurement for semiconductor materials, process control, & devices

AUTHOR: Bullis, W.M.

CORPORATE SOURCE: Nat. Bur. Stand., Washington, DC, USA

NUMBER OF REPORT: TN-592

SOURCE: Aug. 1971, 67 pp.

DOCUMENT TYPE: Report

TREATMENT CODE: General Review; Experimental

COUNTRY: United States

LANGUAGE: English

AN 1972:344464 INSPEC DN A1972-006790; B1972-004563; C1972-002757

AB This quarterly progress report, tenth of a series, describes NBS activities directed toward the development of such methods. Significant accomplishments include successful application of the **surface photovoltage** technique to the measurement of carrier diffusion length in silicon epitaxial layers and development of a simple method for measurement of acceleration and terminal angular velocity of a photoresist spinner. Work is continuing on measurement of resistivity, carrier lifetime, and electrical inhomogeneities in **semiconductor** crystals; specification of germanium for gamma-ray **detectors**; evaluation of wire bonds, metallization adhesion, and die attachment; measurement of thermal properties of **semiconductor** devices, transit-time and related carrier transport properties in junction devices, and electrical properties of microwave devices; and characterization of silicon nuclear radiation **detectors**